UNCLASSIFIED

AD NUMBER AD843345 NEW LIMITATION CHANGE TO Approved for public release, distribution unlimited **FROM** Distribution authorized to U.S. Gov't. agencies and their contractors; Critical Technology; MAY 1961. Other requests shall be referred to Space and Missile Systems Organization, Attn: SMSD, Los Angeles, CA 90045. **AUTHORITY** Air Force Space and Missile Systems Organization ltr dtd 28 Feb 1972

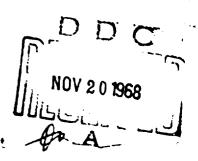


This document is subject to special export controls and each transmittal to foreign governments or foreign nationals may be made only with prior approval of:
Hq.SAMSO, LA., Ca. 90045
Attn: SMSD

Limited number of copies containing color cities at a containing color cities at a containing color co



CONVAIR (ASTRONAUTICS) DIVISION GENERAL DYNAMICS CORPORATION



CONVAIR ASTRONAUTICS FORM A2136-1 (9-80) AS

Best Available Copy

GATE 5/23/61

MC. OF PARCA 13R

CONVAIR ASTRONAUTICS

CONVAIR DIVISION OF GENERAL DYNAMICS CORPORATION

REPORT NO. 742236

EVALUATION TEST REPORT

FOR

SWITCH ASSEMBLY AC-DC, MAIN POWER

CHANGEOVER, MISSILEBORNE

DWG. NO. 27A-06166 27A-06177 CONVAIR.
ASTRONAUTICS
AUG 3 1961
LIBRARY

CHECKED BY G. T. Sheets, Jr.

Ass't. Test Lab Grp. Rogr

APPROVED BY CAMP CAPPED TOUT.

Chief of Test tabe

NOV 20

ha

REVISIONS

This document is subject to special export controls and each transmittal to foreign governments or foreign nationals may be made only with prior approval of:
Hq.SAMSO, LA., Ca. 90045
Attn: SMSD

ۋىن.

NS.	DATE	DY	CHANGE	PARES AFFECTED
and the second second second	·			

the tind number of restee containing colors

REPORT.	7	A	2236
PAGE		1	

BUNMARY

The data presented in this report represents the results of Bogineering Byaluation Tests performed on the Main Missile Power Changeover Switch, Part Number 27-00100, according to CVA test procedure 7 A 2236, and Test Inberatory Test Request. 7 A 2236.

Two specimens, serial numbers COl and CO2, menufactured by the Kinetics Corporation, Selana Beach, California; and two specimens, serial numbers 121 and 124 manufactured by United Control Corporation, Seattle, Washington, were tested concurrently. The individual tests performed on each specimen are listed on Figure 3 with asterisks indicating failures.

Figures 5 and 6 are schematic diagrams of the test setup.

This test was performed on a semi-formal basis, in that an approved procedure, and standard data sheets were used; hereever, the tests were not witnessed by inspection.

While this evaluation test was being conducted a noise problem developed in CV-A Receiving Inspection involving the production units being manufactured by United Control Corporation. CVA Components Test Laboratory was assigned the job of resolving the problems as an additional task to this test. The detailed testing data and results of the noise survey are included in this repart as Addendum I.

Not including the noise problem, 18 failures and/or out-oftolerance readings occurred during the test. Five of these failures and/or out-of-tolerance conditions occurred on the Kinetics Corporations specimens, and 13 failures and/or out-oftolerance conditions occurred on the United Control Corporation specimens. A comprehensive discussion of these failures, and the test in general is included in a separate portion of the test report labeled "Discussion of the Data".

Original data, not included on the data sheets, is recorded in Engineering Work Book No. 7482 on permanent file in CVA Components. Test Laboratory (Dept. 564-5).

A	ST	RC	N	IA	U	ΓIC	28

CONVAIR

reportT	A 2234
PAGE	1

DISCUSSION OF THE DATA:

The general test formet and results, and more specifically, the failures, will be discussed by specimen, which is not necessarily the chronelogical sequence of the tests. Dates and more detailed information can be obtained by referring to the individed a data sheets.

KINETICS S/N 0018

This specimen was received first and was used to setup and calibrate the test set and instrumentation used for the remainder of the test.

While calibrating the vibration setup, a discrepancy in the test set wiring caused a wire in the specimen to overheat and char excessively. The specimen wire was from J 705 L to J 705 No. The test set was repaired and the specimen sent to the vonder for repair.

Before sending this specimen for repair, noneperating vibration per design criterion specifications, was conducted to search for mechanical weaknesses. The results were completely satisfactory.

After being remained and returned to CVA, testing was resumed according to Figure 3 schedule. During the cold test at ambient pressure, one out-of-telerance reading occurred. On an external to internal assembly cycle, AC switch circuit P40 required 16.5 milliseconds to make the kransfer. The specification requires that the time be no greater than 15 milliseconds. This test was repeated several times the next day and all circuits were within tolerance then and on all subsequent tests.

During the remainder of the tests performed no failures and/er cut-ef-tolerance data occurred:

A Life Test was conducted on this specimen and en United Control 8/N 121, but not en Kinetics S/N 002 or United Controls S/N 124 Voltage drop measurements were first made using the test setup and making measurements at sensing leads in the specimen mating electrical connectors according to Figure 5 (schematic of test setup). The specimens were then opened and voltage drop measurements were taken directly across the switching mechanisms according to the test procedure, Paragraph 4.5. The latter readings were aubtracted from the fermer readings and are included as additional data sheets. These data should be subtracted from the voltage drop data taken during all other portions of the test, to obtain voltage drop across the switching mechanism.

REPORT 7 A 2236
PAGE 3

DISCUSSION OF THE DATA: (CONTINUED)

KINETICS S/N 002:

Before any testing was accomplished, this specimen was first used in a CVA demonstration in Washington, D.C. After being returned to San Diego it was lost. The test requestor's representative subsequently found it in the CVA salvage yard. From the quantity and severity of scratches and dents the specimen could very well have been subjected to severe mechanical shocks.

During the ambient conditions proof cycle the 200 ampere $D_{\rm o}C_{\rm o}$ circuit indicated an out-of-tolerance dielectric resistance. The specification requires a minimum of 10 megohms dielectric resistance and this circuit measured .04 megohms to case, with 100 VDC applied. The specimen was sent to the vendor for repair. When it was returned to CVA the testing sequence was completely redone.

During the cold test (Paragraph 4.2.1.1(c)), the specimen failed to perform an assembly cycle from internal to external at 25 VDC. The specimen was again sent to the vendor for repair. When the specimen was returned to CVA testing was resumed from where the failure had occurred.

While sitting dormant in the CVA Components Test Laboratories (ambient San Diega climate conditions), corrosion was noted to be forming on the specimen hardware. The specimen was subsequently subjected to a Salt Atmosphere Test, according to CVA specification 7-00210. At the conclusion of the test a visual inspection showed considerable corrosion on the specimen ground plate studs and hardware. Figure 4 is a photograph of this condition, taken during the visual inspection. During the Post Salt Atmosphere Test proof cycle, a dislectric strength (HiPOT) failure occurred on J 701A to J 701D. The specification requires that this circuit withstand a minimum of 500 V RMS. The circuit broke down at 50 V RMS. The specimen was sent to the vendor for repair, and when returned to CVA, no further testing was accomplished.

REPORT	_\$	A	2238	
PARE		4		

DISCUSSION OF THE DATA: (CONTINUED)

UNITED CONTROL SPECIMEN S/N 121:

During the Initial Satisfactory Performance Test, and on all subsequent tests where measured, dielectric atrength failures occurred. CVA specification 27-06166, Paragraph 3.6.3.6, requires that the specimen, between adjacent power circuits and between each power circuit and case, be capable of withstanding 1500 V RMS. Only one circuit was cut-of-tolerance on the Initial Satisfactory Performance Test. J 706 E to case broke down at 950 V RMS. The number of breakdown increased as testing progressed, until 6 breakdowns occurred during the Hot Test. A more detailed description of the dielectric strength failures in included on the individual data sheets.

During the Operating Vibration Tests, a considerable amount of "noise" and "chatter" was noted on the D_0C_1 switch circuits. Due to the vagueness of CVA specification 27-06166 requirements and tolerances on "chatter" this was not resolved as a failure at this time. When United Control S/N 124 was tested the same condition occurred and is discussed in this section, "Discussion of the Data" under United Control S/N 124.

UNITED CONTROL SPECIMEN S/N 124:

During the Initial Satisfictory Performance Test, two complete failures occurred on this specimen. The first of these failures was below tolerance readings for dielectric strength on several switch circuits. After the proof cycle was completed the specimen was opened for failure analysis, with design group and vendor representatives present. It was determined that the wrong type of relay was used for the AC switch. The dielectric strength specification for the relays used in this specimen was 1000 V RMS, and the CVA component specification (27-06166) is 1500 V RMS. The vendor's representative stated that this type of relay had gotten in by mistake and were probably in several production items. A check of the production items on hand at CVA showed this to be the case

The second failure during the Initial Satisfactory Performance Test, occurred during the third assembly cycle attempted. On performing an internal to external assembly cycle the specimen's **ASTRONAUTICS**

REPORT_	7	<u> </u>	2234	B
2044		8		

DISCUSSION OF THE DATA: (CONTINUED)

UNITED CONTROL SPECIMEN S/N 124: (CONTINUED)

D.C. switch assembly failed to transfer completely. When the specimen was opened, under circumstances stated in the preceding paragraph, the fellowing situation was found; In the D.C. switch motor circuit, the motor limiting microswitch was contaminated by a glyptal like substance and was hanging up in the open position. This appeared to be more of a workmenship problem than a design problem.

The specimen, and all production units that were determined to have the improper type of relays, were sent to the vendor for repair. Upon return; of the reworked specimen, testing was resumed according to Figure 3 schedule. During the Operating Vibration Tests, in all three axes, several of the D.C. switch circuits exhibited a considerable amount of soise and shatter. At this point the CVA specification was very vague about contact "noise" or "chatter". It simply stated that it should not exist but did not define the term. A concensus of epinion between CVA Electrical Design Group and CVA Components Test Lab personnel was, that the "chatter" was unacceptable, and that the CVA specification 27-06166 requirements section include a description and telerance for contast "chatter". The specimen was again sent to the vendor for rework.

While this Evaluation Test was being conducted, the Receiving Inspection Dept. (280-2) was experiencing a "noise" problem on the AC switch circuits of the United Control production units. When United Control specimen S/N 124 was received back from rework, it was used selely for resolving this noise problem.

The pepart on testing done and results found in resolution of the "noise" problem are included in this report as Addendum I.

FIGURE 2 : 000

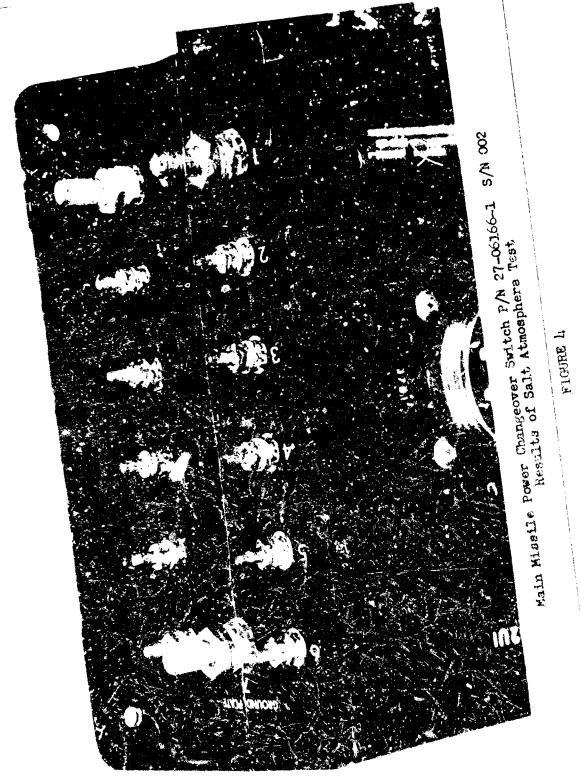
Report 742336 DESIGN V BRATICA DANDITIONS

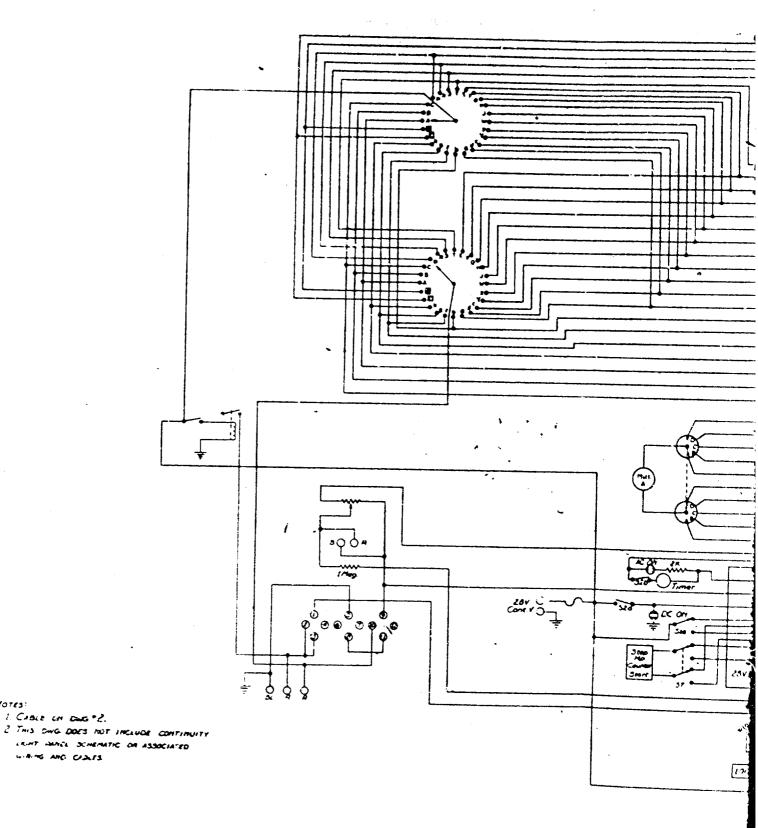
	URITED CONTROL 8/N 124	(*) 1. Initial Satisfactory Performance: Test		Vibration, All 3 axes. 4. Fort Vibration This specimen used to resolve Moise problem from this point on.	
RC INDRIB	UNITED CONTROL 8/H 121	(*) 1. Initial F. tis- factory Performance Test.	ng Vi-	ambient pressure. (*) 530° 6 1 mm Mg. (*) 6. <150° 6 95% R.H (*) 7. + 150° 6 10m Hg. (*) 8. +40° 6 95% R.H (*) 9. Post Faviren-	nentalo 10. Operating Accelerationo (*)11. Re-run of all 3 axes of Orginating Vibrationo 12. Life Test
TEST SPECIMENS	KINETICS S/N GO2	lo Initial fati- factory Performan Test	Satiant 3. Ambient Con- (*) 2. Operations. Ince ditions bration, all 3. Second Initial (*) 3. Post Vince (*) 3. Second Initial (*) 4. 20. At 20.	Vibration and Test **Coperating (*) 530* **Coperating (*) 530* **Coperating (*) 630* **Coperating (*) 730* **Coperating (*) 8. +40* **Coperating (*) 8. +60* **Coperating (*) 8. +60*	9. Salt Atmosphere
	KINETICS 8/N 001	lo Nonoperating Vibration nearch for mechanical weaknesses	factory Performance Test. 3. Operating	Vibration A ambles: 1 nm H 2 o55 RF 2 p55 R. H n of	Environmental Tests No. 7 and 9, 11, Operating Acceleration 12, Life Test

FIGURE 3

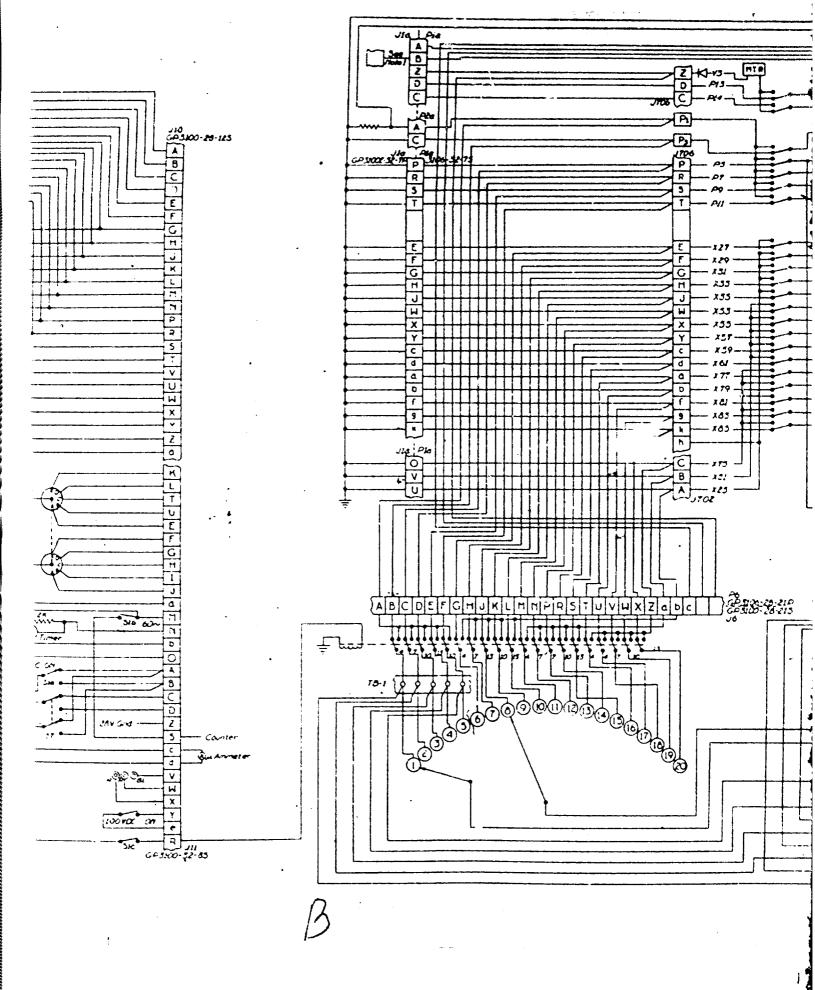
CONVAIR

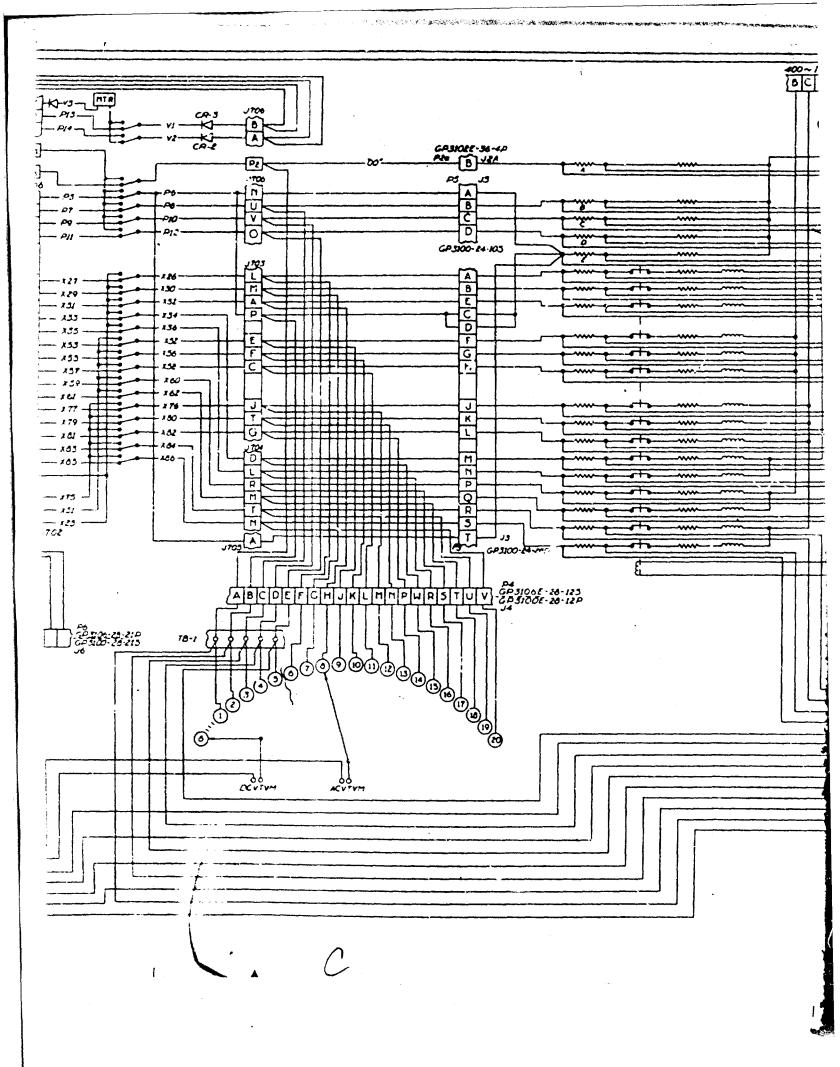
PAGE 9 _____

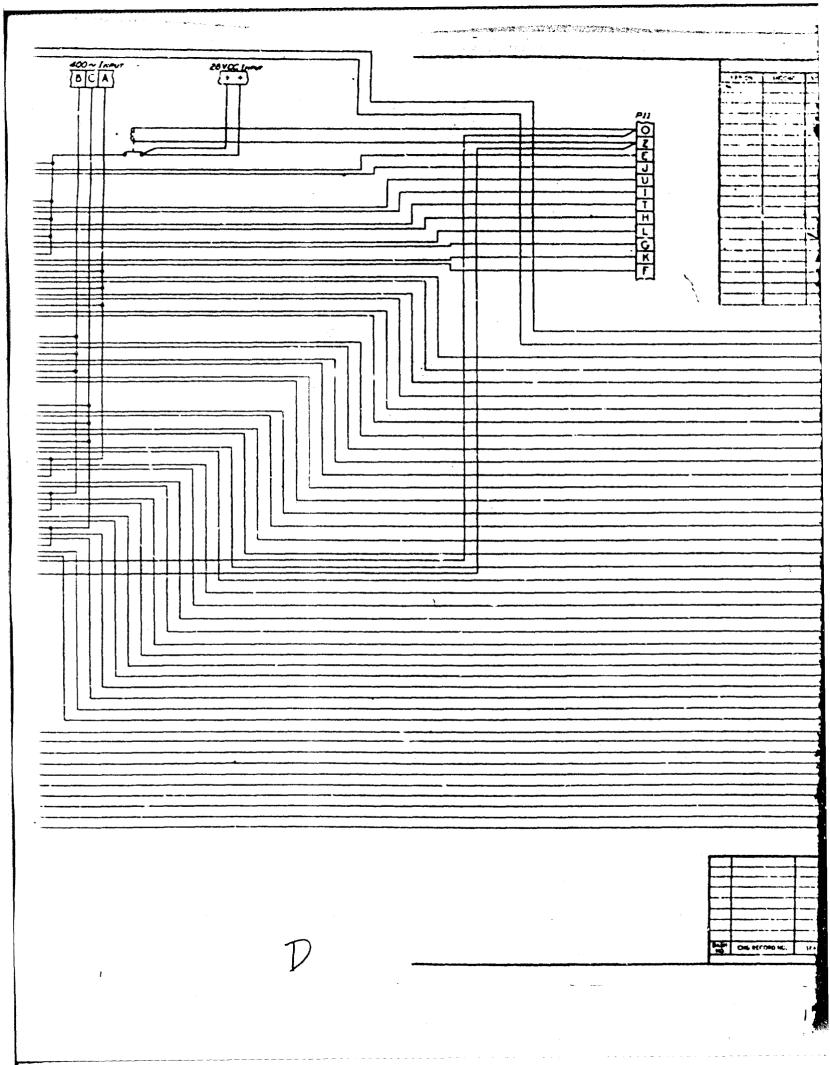


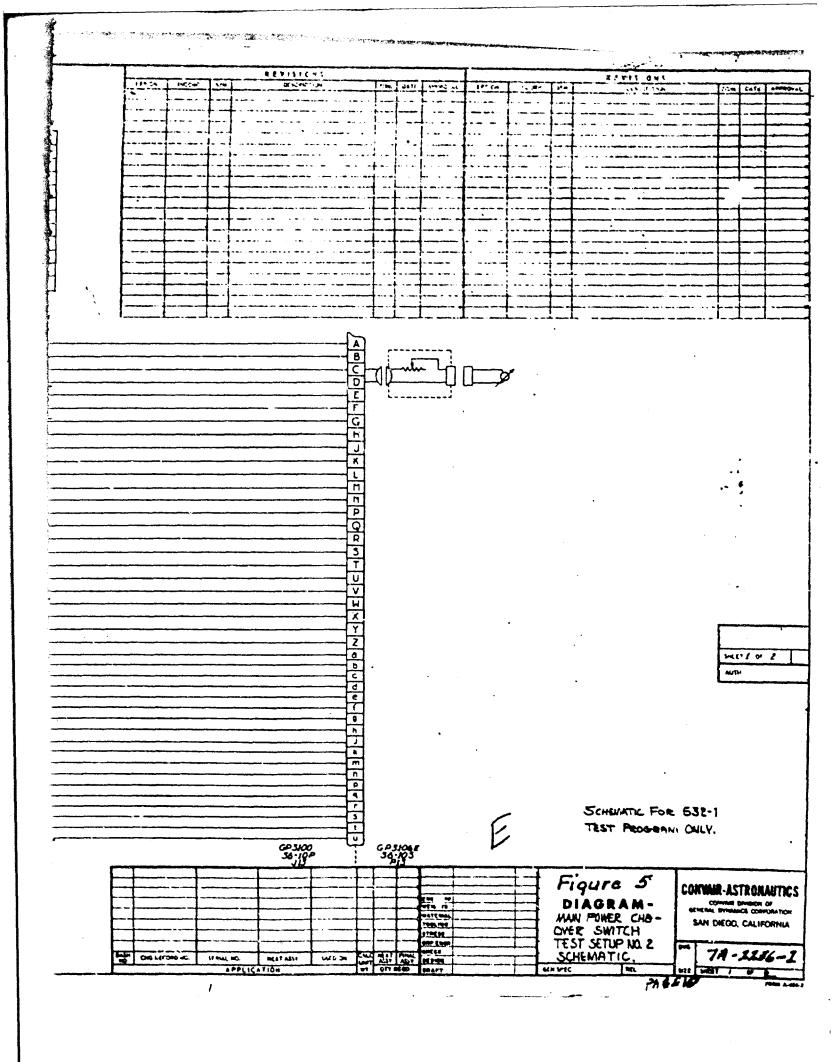


Yores:

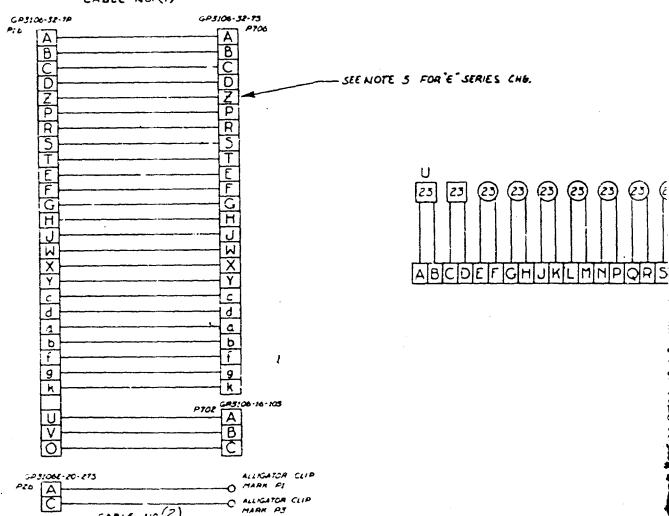










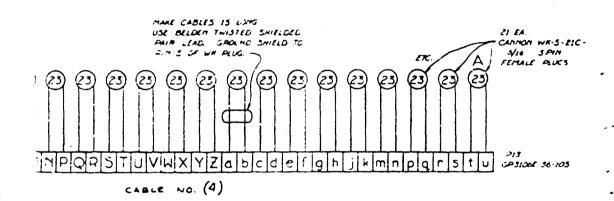


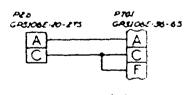
Notes:

- IL USE "18 GA WIRE WITH HEAVY INSULATION -EA CPT. 1500 VRMS. E MARE CABLES 15 FT, LONG +1"
- J. CABLE 1 & COMPRISE "D" SCRIES RYPOT HARNESS.
- 4. CABLE 3 \$ 1 COMPRISE "E" SERIES HYPOT HARNESS.
- S IN CABLE 1 WIRE ON PIN & OF J706 HAS TO BE CHANGED TO PIN N J706 FOR "E" SERES.

CABLE NO(2)

MARK PS

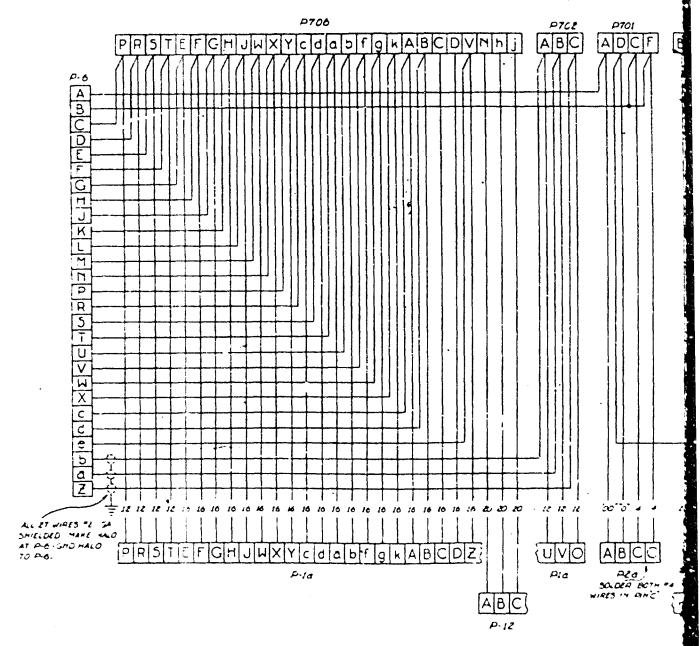




CABLE Na (3)

MAIN PWR. C/O SW. HYPOT HARNESS

Ŀ



PIA GP3106E-38-75 PEA GP3106E-36-45 P3 GP3106E-24-265

P4 GR3106E-28-1ES E5 GR3106E-24-10P

P6 SP3106C-28-21P P12 SP3106E-28-215 PTOI GP3106E-30-65 or GP3108E-36-65

PTOS PTO 6 - 20 - 16 P

P704 GP3106E-22-14P P705 GP3106E-28-11P

PTO6 GP3106E-3E-TS PR035 FT06E-10-6P

Notes:

1 MARE MARNESS IS FT. (+2+4) LOT+ 2 USE STD AN WIRE (TYPE SOR 2 H-13) 3 DIRECT ANY QUESTIONS TO BOTH MALL+

 \mathcal{C}

P705 P703 BDEFGHKLMPSUVAC ADFGKLMPRBCEHUMS KUCLM) JNRT USE ED GA SHIELDED FOR ALL ED CHTS MAKE HALD AT THIS PLUG-GND HALD TO PLUG JUOK BGHLREMP5 AF p.5 و.م TO DEFIGHURLMINER STUVWXZ 0.12

LONG H.E. HILESS STHERWISE MOTEO. HOM MININER EXT. 744

D

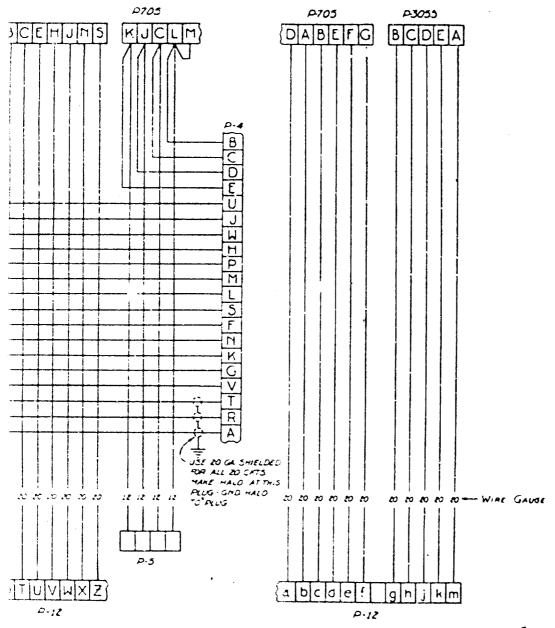


Figure 6
MAIN PWR C/O SW TEST SET NO. 2
"E" SERIES HARNESS

R.T. MOBLEY 10-14-59

PAGE 11 SHEET 2 OF

Command Teach Commence Start System to the Specific de Libertino Com. Initial Safrien 1.4 Operation Time: Aremold, Cyclas

want le CEC Tolarding Int. to Ext. to Int. recording 263

Best Available Copy

ma 19/2

	لمنتك و	ا بر مجند		and with	Lin Dat	a	ela 18	<u> </u>
Per	jain, -	316 vpu	isms 3/H	SOUTH RAP	and (SPES)	lmoor: _	E. L. Mc	Blees
				Cospe	CYA	C Lampi		man l'
中 『海	cornelli	cert of tole:	*3AC*		USA	Insp:	NA.	
A 5	EDALI I	cicle chiui	ION:					
		Fire L.I.	Has	Latero	3	45	ally cycle	
£1	oltes	step	(esconde) (records			N. le Di	
-		0	225	1 74.8	-	***		
	ili	-	202	Linx				
-	. W.		1/5					
1	7.7		CEQ	1 4				
}	254				-			
	25	-	-7 6	7 3 882				
-								
נושום	LOTE TO	THE CHAIN						
		eite setiyfa				YT 8 .	251 NO [
74.0		HAVE SELETATE				100 + 3		
THE	timetecki :	2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4				*		
		MININE		A)		جأء	,	
A.a	n and	illa sociale	greater .	CEAR IU RO	Louisa -	153		
			•					
A 3	ll swite	show musician	tory					
		Para 5.1		20 12	riich pe	mitte		•
	•	_ates	ILS	one sote D	rierra	LI STATE		
		1						
					-			
_		-						,
CILLI	2000	CE IDE. (?	`aillis⊛	conduction	923			
T.3	ormal t	ic Internal		illineecose)			•
Int	ernal t	o External	100-10	illi seoceda	l .			
								į
	ION TRA	NOOTR IDE:	(15 =(11)					,
POSIT	TON TRA	BAR IDE	(15 =(11)	iliiseconda	ed soul	C.F.C.	En 40 Ex	
ron		Dies	(15 att)			C.F.C.	ta do Re	Ac to 32
POSITION TO THE POSITION TO TH	C.R.C	ANTE IDES	(15 at)) 2 to 1a 6.5		ed soul		-5	
POLIT		Services	(15 at)) 2 to b 6.5		Circuit PL2 P22		-5	
POSITION OF THE POSITION OF TH	C.R.C	Services	(15 at)) 2 to 1a 6.5		Circuit PA2 P22 P34	Then In	\$ 5	19
FOR IT	C.R.C	Services	(15 at)) 2 to b 6.5		Circuit PA2 P22 P34 P44	ban Ka	-5	
POSITION TO THE POSITION TO TH	0.1.0		(15 at)) 2 to b 6.5		Circuit PL2 P22 P34 P14 P16	Den Ko	\$ 5	10
POSITION TO THE POSITION TO TH	C.R.C		(15 at)) 2 to b 6.5		Circuit PA2 P22 P34 P44 P16 P28	hen Ho	\$ 9,5 8,5	10
POSITION IN THE POSITION IN TH	0.1.0		(15 at)) 2 to b 6.5		Circuit PL2 P22 P34 P14 P16	Den Ko	\$ 5	2.3

TOLTAGE	PROP:		Maximum Contro	l Voltage ((30 V.)	~		VOLTA
	and teh	In Extern	al Position		SALTED	io later	al Position	
SW. MX.	CIRC	MT.		SW. MK.	T cia	hir	T191	
	בוכית.	17015	070		17014 -	מנפקד.	1150	
В	Inep_	17051	117	· B	Dou -	1237	.151	
<u> </u>	J726T	J. Y. K.	121	c	77014 -	J7051	,155	
D	J776	Ime:	119	n	77014 -	1705: _	154	i
E	ا برمد ل	1235	113	E	17224 =	_ نعتدا	.151	B
P	170£	Limia _	.084	P	1702:	1	051	<u> </u>
O	1	77070	110	G	1702B -		070	0
H	T	Ime	.072	н	77028		033	li li
I	J706a	T	107	I	7702C -		.076	I
3	J7365 -		.084	J	77020 -	1703K	032	J
Ĭ.		J. 703L	.110	K	17024 ·	1	.062	X
L	2706H	12038	.112	L	77264	וווי ארביד	.064	L.
Х	JUGHA	377/2	.115	Ж	7701B -	T-1-	064	н
Я	3706g	177036	1130	Ж	7702C -		.093	N
		15774	.112	0	7724 -	TO LA	.079	C
P	37063	מאנדע	.160	Р	7702B -	137040	.054	
1,	J''reik	277/3	.074		77070 -	I	059	
	1.2.2	43704N	.710	R	J7024 -		.080	R
	3776X	J7CLR	110	Š	7702B -		.058	5
-	J7265	73704.5	1090	•	J702C -	7	. 088	T

CONTINUITY THECK:

All circuits indicated continuity . . . Yes ho See Notes

4.1.8 Initial Satisfactory

F

Date: July 14 1959

Test Engr: R.T. Mebley

CVAC Insp: NA

Minimum Control Voltage (25)

Report 7A2236

Page /4.

ISAF Insp: NA

voltage i	Kui i	Minimum Control	AOT rede ((5 No)		4
	witch in Externi	il iosition		Switch in Internal	Position	1
Bris MK	TREAT	DATA	المنتحادث المستخد	CUSCULT	<u>KW</u>	1
	מנכת - שנסת	.093		17011 - 17010	. 125	
	J734F - J705L			J7014 - 1 J7051	152	
2	1 37345 - 3735K	1120	S	. 77014 - 1705X	154	· •
	1776E - 17053	: 119	1 2	J7014 - J705J	153	
	J7064 - J7705C	114	3	17014 - 17052	150	-
y	5706E - 37074	.081	7	J7024 : J7034	1078	1-
9	57000 - 57730	110_	3	3700B - 3703D	. 063	!
ł:	77501 - 1'2T		<u> </u>	177223 - 17763E	1:33	
*	176a - 1773C	10=	1	Lecent score	.074	
J	3706f - 3102K			17002 - 1701K 1	. #31	<u> </u>
X	27066 - 27031.		1	177921 - 171031 1	1060	
<u>_</u>	אינרינ - אפרינ	11/2	1	J7024 - J7034	162	<u> </u>
X	J70/4; - J703P	.115	H	177003 - 1700E 1	572	
N	אנטיו - זייניה	.130	1	שנטה - ניטינו	571	<u> </u>
c	J7062 - 3 7023	112	10	1700A - 1700A	076	<u> </u>
<u>I</u>	77364 - 1,77346	165	P	Jona - Jour		<u>:</u>
	27.62 - 27.22	593	1	1. 11202 2 2 4		-
R	1704F - 17048	110	<u> </u>	1 TOUR - TOUR	277	
<u>.</u>	ישוריית - האחדה	150	5	J J7723 - J7724	156	<u> </u>
	57011 - 57015	-690	17	7000 - 7007	. 04-1	

CONVAIR | ASTRONAUTICS

General Test Results: Satisfactory Specimen 3/1 001 Kinetics Corp. Specimen.

Paragraph	Specification Requirement	Remarks
4.3	Operating Vib.	
	y mxis	
•	·	
	•	
1.4	Operating Time:	
	Start 1084 hrs. Stop 1099 hrs.	
	Assembly Cycles 6	
	Start hrs.	:

- mount 1. Shaker over load Kicked out at about 37 CPS but was reset immediately
 - 2. Shut down at 85 CPS to change recorder mays. 5-85 CPS Midwest May, SN 137
 - 3. Made switch transfer Int. Ext. Int @ 210 CPS
 - 4. 85-2000 CPS Mag. # 159 No Sw. +xfer on this roll, at end of run.
 - 5. made fuitch transfer Int. Ext. Int. or gray. sp 137 6. Data reacced and min linked cream.

MONET 742236

	_	> "V"			•		, ,	
Para	منتد .	3 "Y" A	XIZ	_	* Det	1 /41	417 5	7
Tor :	pere	Z 3 spec	Limen 5/H .	20/	The state of the s	Deex:	O.T. Mo	bless
		Kine	trice Con	n. 3200	THE COLUMN			any .
						C Impi	7774	'
* 11%	SICEVAE	out of tole	rance		USA!	Insp:_		Park Reference
AS	SEMBLE C	YOLE OPERAT	ION:					
		Para b.1.8		toleren	00			
	oltage	step	(proceds)	D	\ LIDE		bly cycle	
		4 00 h	(54 50000)	(2000	Int	to Ext E	tal california	
L	107		I	Year		l		
	167	d	1 / 10	3 == 3		JY	7	
-	307	-	1/1//	2		1//	}	
<u> </u>	_	3	1 - Y - F	-				
<u> </u>	_307		-	2 797				
<u></u>	257			1200				
	257	- 1	1	2 mex			}	
}								
DIET	7 (TO TO #	TRENOTH:				_		
			_		λ/.	d	¥0 [
▲.	II crea	its satisfa	crosy - '		1-12	' ms	3 0 C	
						•		
IXSII	LATION	ESISTANCE			_			
1	ll circu	its measured	d gracter t	ham 10 -		M vre	- MA	
~		The market of a	a fragmer .	ANGEL TO ME	all comments	,50		
								•
SKIT	H.COLT		CHACOUT THE	TY				•
		MICH AND W		XX.				•
		hos patisfac	tory			· ·		
			tory	xe L	tritab po			
		hos patisfac	tory	xe L	britch no			
		Para u.l.	tory	xe L				
		Para u.l.	tory	xe L				
		Para u.l.	tory	xe L				
		Para u.l.	tory	xe L				
		Para u.l.	tory	xe L				
A)	ll evito	Para h.l.	ILS	ac not	VA			
A)	ll evito	Para h.l.	ILS	ac not	VA			
CML	ll svite	Para h.l. sten	ILS CONTINUES OF THE PROPERTY	ee note	Internal			
CTELL	ll svite	Para h.l. sten	ILS CONTINUES OF THE PROPERTY	ee note	Internal			•
CML	ll svite	Para h.l.	ILS CONTINUES OF THE PROPERTY	ee note	Internal			
CTCLU Ext	ll switc	Para h.l. sten CE TIME: (2	ILS PO MILLIANCE SO MI	onds mini	Internal			
CTCLU Ext	ll switc	Para h.l. sten	ILS PO MILLIANCE SO MI	onds mini	Internal			
CTELLI Ext	E SPONEN ternal t	Para h.l. Sian Figure 1.1. Sian CE TIME: (f	ILS PO MILLIANCE SO MI	onds min	Internal Int			
CTELLI Ext	E SPONEN ternal t	Para h.l. Sian CE TIME: (2 o Internal o External	ILS PO MILLIANCE SO MI	onds min	Internal Int	iriama.		
CTCLU Ext	E SPONEN ternal t	Para h.l. Sian CE TIME: (2 o Internal o External KSYZE TIME:	ILS PLIS PORT OF THE PROPERTY	onds min	Internal Int	iriama.	In to Br	
CTCLU Ext	E SPONEN ternal t	Para h.l. Sian CE TIME: (2 o Internal o External KSYZE TIME:	ILS PLIS PORT OF THE PROPERTY	onds min	Internal Int	C.F.C.	In to Ex	Ex to In
CMIN Ext Ind POSI;	E SPONEN ternal t	Para h.l. Sian CE TUS: (2 o Internal o External KSFFR IDE: Da to Ex	ILS ILS ILS ILS ILS ILS ILS ILS	onds min	income in the state of the stat	C.F.C.		1000
CMIN Ext Ind POSI	ternal ternal to C.E.C.	Para h.l. Sian CE TIME: (2 o Internal o External KSYZE TIME:	ILS ILS ILS ILS ILS ILS ILS ILS	onds min	insum) is circuit. P/2	C.F.C.	En to Ex	5
Ext. Int. POSI:	ternal ternal to C.E.C.C.	Para h.l. Sian CE TUS: (2 o Internal o External KSFFR IDE: Da to Ex	ILS O millisect SO millisect Story (15 millisect E to m	onds min	insum) is a sign of the sign o	C.F.C.		25
CMILL Ext Int POSIT	ternal ternal to C.E.C.	Para h.l. Sian CE TUS: (2 o Internal o External KSFFR IDE: Da to Ex	ILS ILS O millione SO millione (15 millione R to m	onds min	imam) imam) imam imam imaximum firmit P/2 P22 P34	C.F.C.		-5 -0 -0.5
Extinue Positive Pit	ternal ternal to C.E.C.C.	Para h.l. Sian CE TUS: (2 o Internal o External KSFFR IDE: Da to Ex	ILS ILS O millisec SO mi (15 millisec H to m SO mi (5 millisec SO mi S	onds min	imam) is is figure is figure	C.F.C.		-5 -3 -3,5 -9,5
Ext Ind POSI: P14 P32 P30 P36 P40	ternal ternal to C.E.C.C.	Para h.l. Sian CE TUS: (2 o Internal o External KSFFR IDE: Da to Ex	ILS ILS ILS ILS ILS ILS ILS ILS	onds min	imam) imam) imam imam imaximum firmit P/2 P22 P34	C.F.C.		5 23.5 9.5 7.5
Ext Ind POSI: P14 P32 P30 P36 P40	ternal ternal to C.E.C.C.	Para h.l. Sian CE TUS: (2 o Internal o External KSFFR IDE: Da to Ex	ILS ILS O millisec SO mi (15 millisec H to m SO mi (5 millisec SO mi S	onds min	imm) is Girenit PL2 P22 P34 P16	C.F.C.		5 23.5 9.5 7.5
Extinue Positive Pit	ternal ternal to C.E.C.C.	Para h.l. Sian CE TUS: (2 o Internal o External KSFFR IDE: Da to Ex	ILS ILS ILS ILS ILS ILS ILS ILS	onds min	imam) is is figure is figure	C.F.C.		-5 -3 -3,5 -9,5

4

1754 NY & 787

MI 17

4.1 TEST CONDITIONS AND PROCEDURES: (Continued)

Specimen S/8 Ook Kinetics Test Engri R. T. Mobley
Corp. Specimen USAF Insp: NA

Paragraph	Specification Requirement	Romarks
4.3	Operating Vib. "X" Axis	Accellerometer recorder #1 Drive #2 "X" Axis #3 "Y" Axis #5 "Z" Axis #6 Pipper Mag. # 26135
1.4	Operating Times	
• ₹ :	Start /// 4 hrs. Stop /// 9 hrs.	
•	Assembly Cycles 2	
	Start hrs. Stop hrs.	

50-200 Mag. # 137 50-200 Mag. # 159 Switch I-E-I@ 750 CPS Data reduced 7-24-39 - Entire run losks Nean.

For pare. ####################################	No Mo
ASSEMBLY CYCLE CYPRATION: Control Para h.1.8 Time tolerance Type of Assembly Control Con	No Mo
ASSENCE CICLE CIPRATION: Control Para 4.1.8 Pine tolerance Type of same voltage step (seconds) (seconds) Int. to Ext E 157 A	No Mo
Control Fara 1.1.8 films tolerance type of asset voltage step (seconds) (seconds) Int. to Ext E 157 a 1 max 157 a 1 max 157 a 1 max 157 a 2 max 157 a 2 max 257 1 2 max 258 1 2 max	*1. to Int
Pare 1.10 Seconds (seconds) Int. to Ext F 157	*1. to Int
DIRIGHTIC STRENOTH: All circuits masured greater than 10 megohas - MA YSS MITCH CONTINUES AND NON-CONTINUES. All switches satisfactory Para 1,1,0 year and finish position.	*1. to Int
157 157 157 157 157 157 157 157 157 157	#0 C
187 4 // 2 max 307 5 // 2 max 307 5 // 2 max 257 1 2 max 258 1 2 m	
TOT ! ? PAY YOU ! PAY 25T ! PAY 25T ! PAY 25T ! PAY 25T ! PAY All circuits satisfactory - AATES DISHLATION RESISTANCE: All circuits measured greater than 10 megohus - MAYSS MUTCH CONTINUTY AND NON-CONTINUTY All switches satisfactory Para 4.1.0 PAY SO Switch position	
DININGTRIC STRENGTH: All circuits satisfactory	
PATE 1.1.0 SO Switch position	
DIRIECTRIC STRENGTH: All circuits satisfactory	
DIRECTRIC STRENOTY: All circuits mainfactory	
All circuits satisfactory	
External to External 46 milliseconds CYCLE SECTION (20 milliseconds minimum) Surfrq Internal to External 46 milliseconds	ntch made vib. @ 7500fs
POSITION TRANSPER TOR: (15 millises onds maximum)	•
C.V.C.	In to Dr Ex to In
Circuit then to	10000 1000 1000 100 100 100 100 100 100
PL 7 5 7 PL2 1	4 6
P12 0 5 7 P2 0	4 6
P10 7 3 P1	7 8
P14	7 8
PLO 9 10 P16 N	1 7 1 B
P18 7 8 P28 3 20 7 8 P18 7	10 12
20 7 8 7	3 4
P76 M 4 5	

HMI: 742236

4.1 TEST COMDITIONS AND PROCEDURES: (Continued)

Specimen S/N ool Kinetics Corp. CVAC Inspi NA

Specimen SAF Inspi NA

Paragraph	Specification Requirement	Remarks
4.3	Operating Vib. "XinAxis" "Z"	
1.4	Operating Time: Start /// 9 hrs. Stop //2-4 hrs. Assembly Cycles # Start hrs. Stop hrs.	

Note: 1. 5 - 225 MAG # 159

Spirch I-E-I (2) 1850ps

225 - 6000 MAG # 137

Data reduced Run Looks 600d on"Z" Axis

•

يقن ا

PARL 220

step	Time (seconds)	(seconds)	Int. to		-	to In
A A	1/1	PAX	1	\mathcal{I}	Δ	
4	1071	1 ===	1	1		
		2 7		1	L	
1_1_		2		<u> </u>	L	
		2 mx		<u>k_</u>	175-	
		2 max				
			//A 1 PAX			

CITE SECTION STORE	shmosseillim 05)	minimum)
The state of the s	/ x 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	

Pare bale

External to Internal 50 millisocomie

Internal to External 45 milliseconds

POSIT	TON TRANS	TI III	(15 = 111	iseconds:	erica)		_	····
,	C.3.C.	to Verez	w to be		Cipenia	C.E.C.	In to Ex	Ex to In
Cimula			7.5	1	2/2	Y	1	4
Pli	<u> </u>		6	•	722	8	B	8
232		7	2	•	PU		7.5	9.5
	1	7	6	1	PLL	9	18	<i>a</i> · · ·
P40	1	110	10]	P16	R	5	<u> </u>
P18		6	7.5]	P28	3	12-	12
P20				}	738	 	13:5	2
726		15	フ・メ		1	L	1	L

CONVAIR

HP041 7A223

4.1	TEST CONCUIT	ONS AND	PROCE DUNES!	(Devaitaco)
-----	--------------	---------	--------------	-------------

Constal Tost Rosults: Satistactory	
Specimen SIN OOK Kinetics Corp. Specimen	

Paragraph	Specification Requirement	Remarks
4.3	Fost Vibration Front Cycle	
1.4	Operating Time: Starthre. Stophre. Starthre. Stophre.	

more 1. CEC Mag. # 508, record #39 Int- Ext. Int.

....

CONVAIR ASTRONAUTICS

1

##POH! 7A2216

Pare. #1	Post	d Vibrati	on .	Date: Engineer	7-3-1-21 E. T. Mobley
• Indicates	and of total	KINGTO	as conf.	CVAC Ime	
	COLL OF THE			OJA: LEE	P*
Control voltage	rara u.i.o	Time	tolerance (seconds)		rembly cycle
107		215	J PAX		
187	4	241	J mi		
307	f	118	2 747		
707	1	1.128	2 202		
257	-	1.144			
257		1,156	2 Sex		
Submit com	ulte measure	lowcont Dail le sory		Huma Y	
	Para li.L.	0 1 1		tch position	
	aten	123	ee note In	arms Litter	
	j	1	 >		_
•	-				
					=
CYCLE SPORE		20 millione 27 mi			>>→

POSIT Circuit	C.B.C.	D TO BY	En to In	isecomás :	Circuit	C.Y.C.	in to in	Ex to In
****	AMA.	-7	7			DAD TO	77	-
- 114 977	0		4		P/2	8-	75	3.3
P30	H	4.5	- 6		P34	F	7.5	75-
£36	Ţ	4,5	-5		P/./	Q	7	R
PLJ		10	10.5		P16	Я	7.5	6
P18	X	7	7.5		P28	3	10	10
P20		8	8		P18	Ī	3	4
P26	X	4	5			I		

FORM NO 4784

	Maximum Control Voltage Amilian in External Position			Sylich in Intern			
W. HX.	CIRCI	ſ	5474	SV. ME.	C.Ru.II.	DATA	
4	J-010	מונייני	.081		בנסת - עכת	.112	
8	177. P	12021	1109	5	17014 - 1705L _	139	
<u>c</u>	27.70T	STYLE	114	16	77014 - 57725K	141	1
<u> </u>	ente .	Trans.	.108		лтем - j.тоs:	.139	
Ľ	Jan.	12.20	166	1	עמר בי איברע	.136	
	- 32 L	مندنا	. 088	7	1202: - 1724	.052	-
<u>o</u>	1	בנבתו	.110	<u> </u>	מיטיני - פינסינ	.068	
h		- ಇದ	.096	4	770.4 - 1.573.4	. 034	
<u> </u>	<u> </u>	37.6	.105	<u> </u>	77020 - 1770XC	.069	11
J	·	777 3K	.087	J	אנחיו - מופדע	. 032	4
<u>. </u>	J77:45	.7771	.105	1.	1700A - 17031 _	. 059	
<u> </u>		אננגני.	110		ב אוכת ב בכת	, 065	
<u> </u>	Jan Sun	" "P _	.120_	N	170.8 - 1700P	,070	1
¥	1	אנתי	.115	X	Low - more	075	1
Q		J7744	.115	0	T.C.24 - 177-24 _	.086	11
P	J-76!	27740	.100	P	17:34 - 17:40	,049	
•	J. E.	277.5	,084		נאריה - סרכיה	.055	
R	J 74.F	الإيلادل]	1/20	R	22022 - 77228	୍ର ଓଡ଼	
S	x	J7C4A	100	S	7792 - 1277CE	.04.9	
•	J7.65	J734.T	.090	•	די כי ב אחים	. 037	

All straute indicated continuity... Isa No See Actes

4.3 Post Vib. Proof Cycle

Tout Ent: E. T. Mabley

NA

ise 23

Report 7A2236

	•	i. Inspi	NA		RIAE . nap	NA
ye:	LTA B [RU]	Kini	aum Control Vo	Leage 125	V.)	
	uwitch.	in External i	oeltion		Cwitch in Internal	Position
	ta Mha		ZATA	بدهدا كتسه اللعا		I ATA
	- בנמים א	מוכיג!	,083 ;	A -	27014 - 5.015	.114
	da ionue •	FIGIL	.109		J7114 - J7011	141
	.2 27542 -	. rrott .	.115	1	That - That i	,144
	$\mathcal{J}^{(n)}(f_{K_n}) =$. 773.2	.110	Ŷ	2771A ** * 7	1112
	¥	, J7756 🗓 🔻	.108	. Ľ	J7014 - , J77 13 1	,137
	Elm . That to	Larcan III II.	089	!	37114 1, 27334 .	,052
			.110			,067
	- 1 - 1 - 1 - 1	1:72	.048	<u> </u>	man , rur .	. 035
	i 1716e =		1104	1	. בינות לי בינות	.067
	J J		1087	.	STATE OF STATE .	, 030
		ינכיה.	,105	I	77724 - V .L	. 0.60
	- note -	אַנַרדנ	.110	<u> </u>	1000 - 1000 .	0.65
L	א ואירג א	מינמיז.	1120	N.	man - Car.	. 0.70
	N Free -	. 1.~~3 3 €	115	. 1	Law is a marie	. 0.75
		104	.115	0	That I had .	. 286
	P 704		150	P		. 048
	-		.095			. 0.56
	R 17765 -	1	.120	k	712. A 71 51. 43	. 2 <u>8</u> 8
	3 3770 -	" 728	.150	5	many of the second	. 249
			,091	7	grand programme and the second	037

OLTAGE	DROP1	Marciaum Control	Voltage ((30 %,)		10
	exten in Attern	I Posities		Switch in Inter	mal Poetilion	
Ma Pla	CIRCUIT	DATA .	SW. XX.	CIACITY	Tara I	
<u></u>	בוסום ב שופום	0.110		מנכת - שנכת	10.114	
8	TTICP - TOSL	2.114	<u> </u>	TMIA - JOSE	0.127	
<u> </u>	7700: 47735K	0.111	10	77014 - 1705K	0133	
<u>a</u>	2776 27751	C115	10	77014 - J720511	10132	
<u>r</u>	שמת - אמת	0,119		17014 =7.8C	0.129	
7	17068 - 17034	0.115	7	77024 - 77014	0.042	
C	ב מנבים ב	0.100	0	17028 - 17079 -	0.062	
H	17264 - 7237	150.0	· K	77028 - 7707F -	0024	
I	3706a - 3703G	0.100	1	77235 - 170 XG	0.044	
J-	J7061 - J703X	0076	J	7702C - 17701X	0.023	
₹	J7066 - J7031	0.10\$	K	77024 - 77031	0.052	
 L	2706H - 1703H	0.130	i.	אנכדע - בבנדע	0.056	
X.	שליים ביים איים	0.175	K	1702B - 1703P	0.066	
,1	J7062 - J7034	0.100	И	17020 - 1703k	0.068	
0	27662 FJ7774	0.100	0	J7024 - J7744	0074	
<u>*</u>	3776d -3704C	0,080	P	17728 - 370 <u>4</u> 8	0.043	
ک	J748 -274,3	0.075	Q	J7030 - J774;	0.042	
R	1704 457048	0.120	R	77024 - J724H	0.082	
3	3776X - 37CLR	0.087	- 8	57028 - 137048	0.043	
	J7266 J7245	0.078		57020 - 57743	0.034	

CONTINUTY CHECK:
All sirabits indicated continuity . . . Yes No

4.2.1.10 -65° F. COLD TEST.

0043 Midwest RECORD # (137 1st run)

CHANGE: INT. - EYT. - INT.

Date 7-29-59

Page 27

Test Eners Mobiley/Hanson Mavender

Report 7A2236

	VAC Insp: NA	ISAF Insp: NA
	ALC:	IDAY Insp: NA
MO1 54 501 1 1		
VOLTAGE LEGT:	Minimum Control Voltage (25 V.	}
	The second secon	3

	(2) V.)						
	Switch in Laten	al Fosition	Switch in Interval instition				
- Bearita	Cisqui	DATA	in the	CINCULT	Lin.		
	. מנכהנ - מנכה	0.130	1 6	27014 - Jmin	0.126		
<u> </u>	TOUR : TOUR	0.106		J7014 - J:051	0.128		
	land -, mark	0.106	1	. 17014 1705X	0.134		
2	17065 _ 17051_	0.102	J	J7014 - 77053	0.134		
1	77064 - 77050	0.114	1 1	J7014 - J7753	0.128		
<u> </u>	1. 5/062 - 17034	0.068	LI	J7324 - J7324	0.039		
0	77.00m30	O.CTB		27002 - JT030	0.060		
<u> </u>	77261 - 17275	0.065	1	J7028 - J703E	0.021		
I	1736e - 773C	0.090	1	DOX - 17030_	0.063		
J	170% - 1,001K	0.058	}	37032 - 3721K	-0.020		
X	5776c - 5773L	0.098	1	J7024 - J1032	0.050		
	אַנרדנ - אַפרינ	0.170	<u> </u>	J7024 - J7034	2.055		
H	שניית - אפרית	0.140		J7013 - 7103E	0.065		
<u> </u>	القديدة أ- البدية	0.048		הנרח, - נרחים	. 0.068		
0	5704 - 5704A	0.038	t .	JTTON - JIGA	0.078		
P	7061 - 7016	0.030	P	2.225. 7.22.	C. C44		
	17.66 - 2242	0.072		J. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	0.042		
R	1700F = 17005	0.115	1	JULA TI STOCK	0-084		
<u> </u>	27067 - 11 1/2	0.080		377.3 - 377.	C.C42		
	JUNE - 17047	0,074		J:000 - 7001	0,033		

MM1 74223

4.1 TEST CONDITIONS AND PROCEDURES: (Continued)

Conoral Took Results: Satisfactory	UNION 7-28-59
Spectaen S/N 001. Kinetics Corp. Specimen	Test Engri E. T. Mobiley CVAC Insp: NA USAF Insp: NA

Paragraph	Specification Requirement	Hemerks
4.2.1.1	Radiont Heat	Max. non-of-crating temp. of specimes is 154.F
1.4	Operating Time:	
,	Stop NA hrs.	
	Start NA hrs. Stop hre.	

box malfunctioned and temperature went to 250°F in about 15 minutes time before it was ciayht. The box was repaired and the test was run this date.

-U+W NC & 102

1001 742230

4.1	TEST CUNDITIONS AND PROCEDURES!	(Continued)
-----	---------------------------------	-------------

Concret Test Heaults: Unsatistactory	ieto: 1/29/59
Spectaen S/N ool Kinetics Corp.	Took Engr: MOBLEY-HANSON-LOWENDER CVAC Inep: U/A USAF Inet: N/A
V T. linetes and out - tales	Auge data

Paragraph	Specification Requirement	Heserks
1.2.1.1 c	C - 65° F. 3.44 Hg I HR. PROOF @ AMBIEUT PRESSURE - 30° F.	The environmental conditions were performed, w/specime in Bemco Box #2.3 per applicable specime para graph noted in 18 Column.
1,4	Operating Time: 113.3	
	Stert 1/3 3 hrs. Stop 1/3.4 hrs.	
	Assembly Cycles 8	
	Start hrs. Stop nrs.	

* Moreon 1. Al switch circuit 140 regalized 16.5 millisec.

to transfer trom Ext. to Int. This test was

10-run several times the next day, it the

Same confronment with this circuit in

tolerance on all runs,

игон 7.2276 Тин 26

Par	المنت والم	4 1/1	44. 44. L	.1.1 %	Congineer:	129/59			
7 car	pers.	3200 Spec	imen 5/X C	CI KINETI	Engineers	MOBLEY-HA	DON. L ME		
		cert of tole			CYAC Imapi				
					'SAF Insp:	WH.	·		
	Control Para L.L. Time tolerance								
	voltage	stop	(seconds)		True of an				
	157		.780) max	1000	Ext. to in			
	184	1 4	.270	1 202					
{	307	5	124	2 mx					
}	307	1	134	2 == 1					
,	257_		157	2 302					
	257	1	.151	2 max					
DIE	ያ እነ ስማጭ የንም ፡፡	ETECNOTE:			,				
417	All etre	elte estisco	· · · · · · · · · · · · · · · · · · ·	ould not	pertonsu				
					-				
DES	HATION !	PRISTANUR.	<i>/</i> }	ce. ld 30	t perton				
	All cire	ille masure	1 greater t	ACCIO 10 mond	person	P7			
				70 men	155				
MAT.	TCH COMP	THE TANK A	ገዝ ሐና ለቁጥ ተንቀን ተ						
1	III svit	the satisfac	COTTY.						
		Para dele		10		1			
	•	atem			ich position				
			T		TONG LANGE				
(THE)	TE CHANNE					Į.	5		
سللنا		CZ 2DE4 (2	O millisec	onds winimes	1)		4		
X 1	rtamel t	e Internal	60%			•			
						•			
Ir	rternal t	o External	-58	llisenneis					
				_					
PQ61	THON TRA	ISTR IDE	، بدن ه کنا	seconde maxi	TTT)		_		
	1 6.8.0	- Contract	I to In	•	C.F.C	· In to Ex	Er to In		
	ليست	3	-3000	LCI	rouls then X				
14		- $ 7$ $-$			12 1	4	3,5 9,5		
N.	1 9		7.2	- ²	22 0		9.3		
36	- 		-		34	4	7.57		
	1	28	_ 1						
243	+ -}-	1/3	72		2/2	7			
2/12	+-}-	13	76.5	P.	16	7			
34 0 18 73		13	76.	P		7	# 		

PAGE 28

4.1 TEST CONDITIONS AND PROCEDURES: (Continued)

Conoral Test Heaults: Satisfato	torina 7-29.59
Specimen S/# 001. KINETIC	CVAC Insp: BRICALLY - HAWSON - LAVENDER USAF Insp: N/A

Paragraph	Specification Requirement	HOMETER
4.2.1.1C	Operate Specimen while Reducing pressure to immited Temp, -65°F	· •1 ,
	Temp, -65°F	
1.4	Operating Time:	
	Stop 1/4.8 hrs. Stop 1/4.8 hrs. 9 hrs. Assembly Cyeles	
	Start hrs. Stop nrs.	*

1. During the first attempt to reach I mm the pressure indicated 1.8 mm Hy no the end of 10 minutes. Continuity rights ox.

2. A second atompt was Made & Remon Imm in DMA.

At the end of 10 min the best A. (Low sees) NAS 1.7 MM.

The proof cice was xivat 10 mm. The pe men

Temp increased to + 17°F.

2. Ran out of time before jetting Ext. to Int. 16 y

Desembly Cycle.

4. Al switch transfer time and cycle sequence were not accomplished on this proof cyclessee re-run of that 7-31-39

FOR ME & MARKET CONTRACTOR OF STATE OF

NEPONT "4.02.36

er pere. 4					· · · · · ·	-M.	T		
				CAYO	Imapi				
Indicates	out of tole	Pance		USA	Inep:	1	9		
ASSIBLE C	ICIA OPERAT	101				/			
¥	rara 4.1.0		COLETEROS	Type	of Ass	erbl.	crycl	Į	
rolters	stop	(seconds)) (seconds)	Int			علي ود		
151	4	1.228	PAX						
187	6 Coul	H not get	4 3 mg 30	enote		Jour	del or	7	
307	1	.135	2 MAI				7	_ _i	
30%		1113	2					3	
257		.149	l lux]	
257	1	-140	3 mg/	T			4	. [
All circu	ERISTANCE:	d greater i	then 10 mga	ohuma	- YES		I NO		1
Dick Coll	hee sekiale	OLCOTTON			ition		1 0		
Dich Colli	the setter	Carcingues etory	IN LAN				1 0		· ·
IYCH CONTI	hoe sekiefe Pera l.l.	OL COPTING STATE TES TO BILLIAM	and make make interest in the second management in the second managemen	arm)	dulo				Lies
All swite	Pera 1.1. Pera 1.1. Aisa CRINE: () CRINE: () CRINE: ()	OL-COPTING etory ILS 10 pillium	Svi Svi Ini December Ini Decemb	Sc.	dillos Sorte		ZM	ot 1	Lies
All swite	Pera 1.1. Alea f	TES TES TO PILITURE	and and interests and	Sc.	distante de la constante de la	(-)	XM 3/-	01 1 '3, y	
All swite	Pera I.1. Also Also Also Also Also Also Also Also	OLECOTY OLECTY TES OLECTY	and seconds Illineconds Illineconds	Signal Si	C.F.	(-)	ZM	01 1 '3, y	
All swite All swite Cit Skore Internal to C.S.O	Pera 1.1. Alea f	TES TES TO PILITURE	ones minimaliliseconés		C.F.	(-)	XM 3/-	01 1 '3, y	
Internal to C.S. C	Pera I.1. Also Also Also Also Also Also Also Also	OR COPTINGUES OF THE STATE OF T	ones minimaliliseconés		C.F.	(-)	2/1 3/-	01 1 '3, y	
All swite All swite Internal to C.S.C.	Pera I.1. Also Also Also Also Also Also Also Also	OLECOTY OLECTY TES OLECTY	ones minimaliliseconés	100 TO 10	C.F.	(-)	XM 3/-	01 1 '3, y	is in
Internal to C.S. C	Pera I.1. Also Also Also Also Also Also Also Also	OR COPTINGUES OF THE STATE OF T	ones minimaliliseconés		C.F.	(-)	2/1 3/-	ot 1	is in
Internal to C.S. C	Pera I.1. Also Also Also Also Also Also Also Also	OR COPTINGUES OF THE STATE OF T	See not Interest Inte	trong to the second sec	C.F.	(-)	2/1 3/-	ot 1	is in
INCH CONTI	Pera I.1. Also Also Also Also Also Also Also Also	OR COPTINGUES OF THE STATE OF T	See not Interest Inte	Section 1	C.F.	(-)	2/1 3/-	ot 1	is in

4. *. . . .

. 4

POLTAGE	DROP:		Maximum Control	Voltage	(30 V.)		VOLT.
	mileh	in littern	l Position		Section to Inter	nel Poetition	
SY M	CIRC	TT T	DIEL	SHe MA		DATA	
1.	77016 -	. J701b	0.100		מנטת - בוכת	0.119	
	imer .	- J7051	C.103	В	TOLE . TOLL	0.134	
<u> </u>	17961	J795K	0.106	<u></u>	17014 - 1705K	0.138	
D	1776	10051	104	10	J701A - J7/05.	0.136	1
	Joya _	- 7725C	7.103] B	17014 - 17715	0134	
F	11706 8	مندرات	0.060] 7	J7024 - J704	0.041	P
0	J.Xc	.77020	C.100	0	1702B - 170 m	0.062.	9
Н.	L LOUY	#1.10 at	0.071	н	J7048 - J70 8	چ سرن . ن	li
1	J706e	-3" JC	0.040	I	77020 - 17030	0,006	
ل ا	ع پارس]x	الدن ن	į.	77020 - 17011	0.014	J
	J7066	1:7031	a 288	I K	77024 - 77.31	0.054	i k
	1206s	Jix	2.12	i l	או כוד בבכוד	0.00/	
_K'	J7064	777 ip	5,105	N	170.B - 1703P _	3.000	М
¥	Jak	J7739	ېږي.	N	177020 - 1770 VA	0.010	N
0	J'''6:	ا مرادال	0.100	0	17724 - 17/ A	CCO	
2	[Johnson]	7.77040	0.019	}	17028 - 1704C	0.044	P
ù	JOHR.	370,3	0.011		17030 - (T'43	0.044	
1	J ツ.F	-J"7/,N	3,12.	(Ĥ	J7024 - J7244	0,09~	R
5	Јурех	-J704R	0 219	S	17.120 - VIIIE	0.04:	
1	J7:X66	J704.T	0072	9	577.0	C 334	1

CONTINUITY CHECK!

All sirguits indicated continuity . . . Yes A No . . . See Notes

Midwerst RECORD# CO44 1018 12 / WM 14,

FAILED TO RESET COUNTER ON 180
CHADAE CUER, FROM EXT. TO LUE
SO MADE KERUN, Lut VII 101 401
DOUNTY 1 JUING

1

Page 30

Test Entre Brierley Lauren Jer Hausen Report 742/36

	•	AC Inspi	•	TSAP 118	DE NA	
VOLTAGE L	kul:	Minimum Control	l voltage (25			_
	Light Co. in L	atemal fosttion		or tob in Intera	ul Postulan	
Ba. Y.L.		<u> </u>	all a like	GIRCUIT	L. CATA	i
	מינ - שנפתנ	10.041	A	J701A - J701D	0.114	1
4	. J?26F - J70	0.106		57014 - 5705L	0.135	T
C	17 0 61 - 170	1	c	J7014 : J7054	0.138	
	J7768 - 572		3	J771A - 775J	0.107	
8	<i>ຫາ6</i> ຍ - ່ຫາ		8	J7014 - J7 43	3.134	+
,	. J 73 61 1 1.10	1		2722A . 2731A	0.042	
0	3700c - ,				0.063	•
1 !!	2724	· -		37012 - 3763F	0.026	
· ·	, 1726a - , 172					†- -
	STOOL F SHO	•		. 510a2 * 17030	0,066	· · •
K	37766 - 377	1		7720 T T L	, O.U!Y	.
	מרט - אסמינ				, 0.054	·- +
	J774 - J77		***	שניסאג - ן מיסטאג	, pole	+
N	i Provi ncia de la composición della composici	· · · · · · · · · · · · · · · · · · ·		JA CONTRACTOR OF THE PARTY OF T		+
	٠,	0.101		And the state of t	دي101	•
				JT 4 7 J 44 .	. 0.395	•
	.17264 ± , 772			2725 7 2.42	. 2 0H4	
	. 17. da. + , 1.0.	7	, 	didudin " . Di undi	. ००व्य	
H			- · · · · · · · · · · · · · · · · · · ·	والمناف والمنافق	, 208	
	י אין אין אין אין אין אין אין אין אין אי		•	ر مسئور (* = أمنور	. <i>े</i> ० व म	÷
1	Though the second	3.075	<u> </u>	The second secon	3 224	

CONVAIR ASTRONAUTICS

4.1 TEST CONDITIONS AND PRICE DURING (ontinued)

Coperal loss Houses Satisfactory	. M. E. 7-30-54
Specimen SIN OOL Kinetics ofp.	CVAC Inch: L. L. Mabley
·	WAT India

	Sheary reserve wadnitessorf
4.2.1.11	+160° F wy 43 h L.H. Test- Froot yele C unbient pressure
1.4	Operating Time: Start //4 Gare. Stop //2 Fare.
Ì	Assembly Lycles
	Startnrs.

Cannot be tested at some Hy, Heressy on this test, NA AU DE INTERES IN The Tata Lox then the introduce I is portorius.

Por pare. Willd specimen S/N OCI Linetic Date: Corp. Spec. CVAC Impi--* Indicates out of tolerance USAF IMBD: Control Para L.1.7 | 1 100 tolerence voltage uter (seconds) (seconds) 187 164 3QY **30**Y 25Y 25V 2 max

All circuits satisfactory - - See Note 2 - TES _____ No ____

All offenite assessed greater than 10 associate -- TES ____ NO ___

MINCH CONTINUES AND NON-CONTINUES.

All switches schislectory

Para _at	L.1.8	T es	ese note	Sylich Internal	Caltion External
		\geq			

CYCLE SCORNCE TIME: (90 millisoconds minimum)

External to Internal 200 millipseconis

Internal to External Har Intilises conta

POSIT		ER IDE	115 =111	TO T S TONS					
Cloud	C.B.C.	ta torex	v to h	7	Closult	C.Y.C.	in is the	ax to In	
_ P14		4.60	5,63		P4.2 e		w8.060	3.1	
P32	1 0	6.74	8.15		722	0	722	90	
F3C	1	5.81	9.2		_ P34	2	1 29	11.1	
PX	<u> </u>	2.22	3 .6		P//	3	7.30	9.4	
P/0_		9.52	9.62	•	[P16]	Ř	4. 45	3.7	
P18	I	6.02	6.68		1 P.8	Š	9.37	11.60	
PO		6.03	27		C. 738		J. Ger	3.0	
PZÓ	H	2.54	9.7						

What a PW.

ir I A

SW. MI. CIRCUIT	ر	_	(30 V.)	Voltage (Maximum Control		FOLSHOR
# 1701G - 1701B		al Position	Sylvan in Intern	-	Position	• •	
B 1706F 1705L 0.129 B 1701A - 1705L 0.165 C 1706T 1705K 0.133 C 1701A - 1705K 0.170 D 1776		DATA	CIMPIT	SH. HE	5424		
C 1706T 1701K 0.133 C 17(14 - 1705K 0.170 D 1705 17051 0.129 D 17014 - 1705: 0.167 S 1706K - 17050 0.128 B 17014 - 1705: 0.161 P 1706K - 17010 0.100 Y 17022 - 17014 .057 D 1706 17050 0.122 0 17078 - 17035 .036 I 1706 17050 0.120 H 17018 17035 .036 I 1706 17050 0.120 I 17000 - 1703K .028 I 1706 - 1703K 0.084 J 17050 - 1703K .028 I 1706 - 1703K 0.084 J 17050 - 1703K .028 I 1706 - 1703K 0.084 J 17050 - 1703K .028 I 1706 - 1703K 0.084 J 17050 - 1703K .065 I 1706 - 1703K 0.138 H 1703B - 1703F .085 O 17065 - 1704A 0.128 H 1705B - 1703F .085 O 17065 - 1704A 0.128 O 17026 .054		0.158	מנמדו - אנמדו		0.112		
G 17267 1728 0.133 G 7731 - 1738 0.170 D 1776 - 17761 0.129 D 17014 - 1778: 0.167 B 17068 - 1735 0.128 B 17014 - 1735 0.161 P 17068 - 1730 0.128 B 17028 - 1730 0.161 B 17068 - 1730 0.122 0 17028 - 1730 0.074 B 17064 - 1730 0.120 B 17025 - 1736 0.079 J 17066 - 1738 0.084 J 17025 - 1738 0.028 I 17066 - 1738 0.084 J 17025 - 1738 0.069 I 17066 - 1738 0.138 B 17324 17328 0.069 B 17066 - 1738 0.138 B 17328 17328 0.088 O 17066 - 1734 0.128 B 17328 0.088 O 17061 - 1734 0.128 B 17328 0.088		0.165	17014 - 17:06L	В	0.129	17705L	B
1706	13		77514 - 17705K	2	0.133	77061 - 1701 K	2
	3.			٥	0.129	2776 - 17751	D.
17068				1	0.128	J7088 J7750	-
0				1 _ 1	0.100	17068 - 1701a -	2
H 17064 - 17016 0.170 H 77018 - 17015 .036 I 77064 - 17016 0.120 I 77020 - 17016 .079 J 77065 - 17018 0.084 J 77020 - 17018 .028 I 17066 - 17018 0.122 K 77024 .7011 .065 I 17064 - 17019 0.138 H 77018 - 17019 .082 M 17065 - 17019 0.138 H 77018 - 17019 .085 O 17061 - 17014 0.128 O 17021 - 7714 .088 P 77061 - 17040 0.118 O 17026 - 17045 .054	1		I I .	1 - 1	0.122	במכר בהסים	0
1706a 170.6 0.120 1 17026 - 1726 0.79 1706f - 1702k 0.08.4 17026 - 1702k 0.028 17066 1702k 0.122 k 17024 1702k 0.065 1706k 1702k 0.138 k 1702k 1702k 0.082 1706k 1702k 0.128 k 1702k 1702k 0.085 1706k 17044 0.118 0 1702k 0.088 1706k 17040 0.110 1702k 17046 0.054	1		1 1	1		1306x - 130 1F _	H
JTOKE - JTOM	1 1)	1 _)	0.120	5706a - 1779.6	<u>.</u>
JTHE -THE D.122 TTHE .065 JTHE -THE B.130 TTHE .069 JTHE -THE D.138 TTHE .069 JTHE -THE D.138 THE .703P .082 JTHE -THE D.128 THE .085 JTHE -JTHE D.128 THE .088 JTHE -JTHE D.118 THE .088 JTHE -JTHE D.118 THE .088	# 3		•			2008 - 2003x	<u>ا</u> ــــــــــــــــــــــــــــــــــــ
17064	-			: (17:60 d.mit	.
17064 - 17049 0.138 1 1708 - 17038 .08? 1 17066 - 17034 0.128 1 1704 - 17038 .085 0 1706: -17044 0.118 0 17021 - 17044 .088 2 17066 - 17040 0.110 1 17026 - 17040 .054	+		1	1 . 1	8130	17062 - 1703M _	
17066 17034 0.128 1 1704 .085 1706: 17044 0.118 0 17021 - 7714 .088 17046 17040 0.110 1 17425 - 17040 .054	#			1		17064 - 1771.P	<u> </u>
5766: -3774A 0.118 0 5721 - 774A .088 5766: -3704C 0.110 P 57425 - 3764C .054	+					1706k - 17074	<u> </u>
572d - 5704C 0-110 P 57426 - 57046 .054	╫╌┪					1706: -3704A	o . la
1 move (move)	-#			1		773d - 7704C	<u> </u>
	#	.059	7793C - 370x3	1	0.101	moka 3774.3	ر ا
The same	#			1		MONE - STOCK	3 3
1770.7 1770.0	╂			1			3 3
1706E 1704T 0.100 I JOOC - 1704 .056	+						1 1

CONTINUITY CHRUK:

All exreuits indicated continuity . . . Yes No See Notes

4.2.1.18+160°F W/95 % PH Proof Cycle @ ambient pressure

Pere 33 Report 7A2236 Test Engri VAC Insp: MAY imps NA Minimum Control Voltage (25 V.) VOLTAGE I RULE: switch in External Position Switch in Internal Position Tina it DATA CIRCUIT LATA .159 ,113 . תוכינ - בוברי. מוכה ו- גוכה .129 . JOSE : 1705L. J7014 - 1 J705L . 166 1700E -1 1705E ,135 .174 JOSE - JOSE .127 J7765 - T/753_ J7014 - T705J -7:75C J7014 - J7743 .163 1126 074 . 056 שאנסדג זו נדמנג 7756 - 17138 ברכים לי פרכים 7731 - 1:02 ,095 ,036 27022 - 1703E 1 בממיני ב שלמיני 120 . 0.73 בוברת וי בכת 3706r - 1700gk .028 . 083 J703: -370_K ונרות ב- מירה .065 . 120 J7024 -TOBL באננרנ ו- אארינ 1145 JOSE H JOSE .069 קינת ו- ביערת JONES - TOP 1 .081 לנישו - ניטנול .085 ĸ 1130 .088 John of Johnson .122 JULY - JULY . 054 7761 - 1 774C -110 ATOME TO ATOMIC . . 059 37.66 - 1 3 max ADDAN TO STEAKING . 092 ĸ TIDLE IN TIME 27063 - 27 W.F . 056 37773 - 377/ .042

13

117081 742235 1481 34

Ceneral Tea Specimen S/	e howers: Undetermined - See was Re-test too CVA	t Engr: Worker-Lauen C Inap: DA U Inap: NA	DES-K, NOSA
Paragraph	Specification Requirement	Senarks	process and the second
4.2.1.1 d)	+160°F Hot test		
	Proof cycle @		
	I mm Hg.	.	
1.4	Operating Pine:		
	Stert 115,4 hrs. Stop 115,9 hrs.		
	Assembly Cycles 10		
	Starthrs.		

TEST CONDITIONS AND PROCEDURES: (Continued)

No teas

1. (1.4 MM) Hay AT THE END OF (10 MIN).)

2. AC switch transfer time and cycle sequence not recorded during this run because of test-set-up problems. See re-run of test made on 8-3-59.

HANNE A 188

PAGE -35

Pere	· 2:4	1. 11. d 8pec		201K with	Chate: 7	- 30-57	
Tor	pere. 3	F.oz. H. G Spec	Lamba S/N &	WI HINE IIC	Engineer:	HAC	to Laver
					CVAC Imp	Han	
• Ib	dicates	out of tole	rance		Waf Insp	:_UA	
AS	SP MRIJ	CYCLE OFERAT	ION:				<u>.</u>
Ĉ	antrel	Para 4.1.5	Time	tolerence	Type of as	ambly cycle	1
 	oltage	stop	(seconds)	(seconds)		Ert. to In	1
r	100		254	3 987			
	LY	1 4	.243	3 202			
	307	1	1.132	2 mx	1		1
_	30V	I i	1.151	2 = 7			1
Ī	25Y	1	133	2 max			1
	257		171	2 mx			
-							j.
		ches setisfed	tory			7	
	•	Pers 5,1,	ILS .		ch position	ថ	
		person &				_	
					\leq	4	
		<u> </u>	$\rightarrow \geq \leq \downarrow$		\leq	4	
		L				ا	
CECLE	E SPARKI	CZ FDGL (S	γ ΄ ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	onds minimum	. 1		
			. 15	ACTOR NIUINE	,		
Ex	terral i	e Internal		llismoomis	5,00	re-run	0-1
							- •
In	ternel 1	o External	نة	lliseconds ,	this to	18-3-	-39
N-0-1-	atial est	11.000 n					- ,
VO!	TA DA	In Core	<u>.:15.=111</u> 1	econdo mil	- Table 1		
man (t	Chan.	DE CORE	x to En		C.Y.	C. In to Ex	BE to In
			-		TRUIT INSIN	-	-
<u> </u>	+ - [1 30		2/2		
32 30	+		16-78		25 0	200	note
36	Ī	700			1	1 >000	Marin.
10	1				n Ac	1	
18	Î				28 3		
					38. 1		
26	H				;	1	1

1014 5" A 16.

4.2.1.1 d. +160 @

	and take to	n Extern	al Position		bytica in lare	rnal Foeitton	7
H. M.	CIRCI	U	1474	Sea Hi	CLECUIT	54.24	
	<u>- 10 مبت</u>	ומנטינ	1 0.115		מנסת - מנית	0.159	
В	AMOLE -	J7051.	0.132	<u> </u>	77014 ." , J736L _	0.169	1
<u> </u>	उल्लंहर ब	J7211 _	0.134	<u> </u>	77014 - J7051	0.170	
<u>n</u>	3776	Jrn353 _	7.124	0	MOIA - MOSC	2.175	
E	J-10		BA1.0	12	17-22A = 1.27.50 =	1.166	
1	Littier =	الماد71	0.044	7	17:02: - 1.17:	0.056	1
0	littore d	ener e e Herrisania	0.135		17028 = 1n -	0.074	
H			2.130	Н	77034 - T.D.S -	0.036	
Ī	רמניה.	<u> </u>	11/2/	I	7 20 - 7774	0.080	I
<u> </u>		<u></u>	3,088	j	770 10 - 171 4	0.028	
	imed 4		2.122	K	1727A .: 1172.4	0 069	
<u>. </u>		17024	2.130			XH 2 300 CC64	.1
X		<u> </u>	0.145	H	anca - ancar	0.082	
4		_ - الخياسي	0,134	H	222	C.081	
<u> </u>			3.120] 0	1 24 - T A	ა ა გ 8	Ì
2	J. 19.4	77/2	2113	<u> </u>	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	0.054	
· - 			٠٠٠ ١٠٠٠		max - m	0.060	L
R	ু ুজা বু	3774N _	2/26	r.	17-1924 - A. Lil	0.092	I
<u>s</u> -	ואַרַידע בּ	170 <u>7</u> 8	<i>0.11⇒</i>	S	722	2,056	I
Ţ	37.83 s	37747	0.102		77070 <u>- 1771</u>).044	

All streats indicated continuity. ... Iss _ A _ See Notes 180 CHANGE OVER WIS ATTEMTED BUT POWER SUPPLY OUTPUT WAS OFF.

115,6 EPECIMEN TEMP. +200°F.

PRESENCE IN 43 14 MM HE HUU LOADS WERE KELLOVEN TO HILLOW STENTIED TO COOL-CFF

COOLED FOR (10 MIN) TEAR CONT. TO CLIMIS. TO 210 F.
HEATING ROOS IN TEMP. CHAMBER WEKE LEFT

3N AND COULD HAVE FOUNDLY LAUSED RADIANT
HEAT ON THE SHEUMEN

F

مانية شكاف كسميسية

Deloi 3-30-59

Page 36

60 0 /mm Hg.

Test Enix: Mobley / Levender / Haren Separe 747236 vad insp: NA

WAY THE MA

Switch in External Fosition . witch in Internal cos.	K.
AL MEL CIRTIE DATA LAL MAL MAGNIT	· .
CONTRACTOR OF THE PROPERTY OF	, E 2
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	(3)
1 1706F - 3705L 0. 13 1 . TOLE - 5705L 0.	17.1
1 1705 - 1705 - 0.157 - 3 . TOLK - 5705K O.	114
1 77% - 17 St 0. 130 ; (7715 - 775) 0.	170
8 7706 - 7750 Q.130 B 37 15 - 1740 D.	166
1 1 mus - 1704 0.045 11 1704 - 1704 0.	<i>058</i> .
0.100	076
37 ky - 10 p 3. (0 p 1 70.0 c, mag . 0.	038
1726 - 3728 0.1 w 3 1 1 570 2 270 0	082
	027
1 1 1 may - may 0, 126 1 may - 1 1 0	.067
9 1 1 17764 - 17774 U.132	012
	083
0.136	089 .
0125 6 37 - 2 30 0	.0 ; 0
1 1 P 1 m w - max 1 3.11 P 12 1 - 5 1 3	056
	062
	074
Annual Control of the	058
0./32	045

MIN, EPICIMEN TEMP PERCIE LOUIS WERE SHATE FF ZZZEF.

p*F. דש מוסו

erpoet 742236 ·MI 37

CONVAIR ASTRONAUTICS

TEST CUMULTIONS AND PROCEDURES: (Continued)

General Test Hesults: Satisfactory

Specimen S/N DOL Kinetics Corp. Specimen

Test Engr: 27-59

Test Engr: 27-59

CVAC Insp: 14-66

USAF INSP: 1

Paragraph	Specification Requirement	HARATES
4.2.1.1e	+ 40° W/95/2RH	Specimen temp. at beginning of proof cycle + 45 . F
1.4	Operating Time: Start //5/9 hrs. Stop hrs. Assumply Cycles 8 Start hrs. Stop nrs.	

1001 7A2236

PML 38

Para, Add (e)
For para, Add (postmen 8/8 Old Engineer: Kinetics Corp. CVAC Inspi USAF Inspi * Indicates out of tolerance tolerence Type of assembly cycle roltage step (seconds) (seconds) Int. to Ext 167 205 225 187 30V 251

DIRECTRIC STRENGTH. All circuits satisfactory - - - Dould not action of to

All circuits masured greater than 10 megohims - - 185 ____ NO INSULATION RESISTANCE

WITCH CONFIGURAL AND ROS CONTINUES

All switches satisfactory

Pare	4.1.0	TES	see note	Strikeh n	Caition Externol
		\geq			
					أسترك
	1	$\geq \leq$			
	1				

CYCLE SEAURNICE TIMEA (20 milliseconds minimum)

External to Internal FE millioccords

Internal to External 40 milliseconds

P061	UOL TAKE	TR TORI	(15 =111	isecondo	parison)			<u> </u>
Circuit	C.E.C.	the street	n to In			C.E.C.	In to Ex	Bx to Lz.
P1/	<u> </u>	6	5.5	}	P4.2	H	2.5	6.3
P32	0	6	6.5]	P22	0	9	0.0
P70_		3.5	8.4	1	P34	2	6	6,5
P34	<u> </u>	3.5	8.0	1	PLA	Q	1	9.5
P/.O		11.5	13.25		P16	R	.5	5.5
P18	X	6	8.0		P28	3	9	11.0
P20		6	6,5		238	1 7	25	2.0
P26	X	2,5	3.0					

FORM NO A /Q. :

· v . V

POLTAGE	PROPI	- The second state of the	Mexican Control	Voltage (30 V.)			VOLT
	British.	in Miarn	al Position		Sidteb	la Inte	riel Peel 1100	
SMa His	CIRC	T T	Die	SHA HE	CIRC	WITT .	LASA	
<u> </u>	7701C =	J7010	0.693		1701A -	J7010	.149	A
E	1776P	77051	0.119	В	7701A -	J705L	153	j
<u> </u>	J7267 .	J705K	0,136	<u>a</u>	17014 -	J7051	10.177	C.
	J706'	17053	0.113		77014 -	J705U	0.159	
	J7068	J720C	0,112	B	17014 -	J2050 -	0,153	
	17068	17224	2.066	7	}	17016 -	0.0+2	F
0	1706c	J703D	0.100	0	J702B		0,066	0
L N	J2064	TON _	0.073	Н	770.1B		0.026	Ti di
1	J796a .	J''036	0.100	I	J792C -		0.070	I
4	5706f -	J703K	0.060	J	7702 c -	J703K	0.021	
	J7060 .	J703L	0.100	<u> </u>	J702A .	2703L	0.057	K
L	1706H _	17:03M	0.110	LL	İ	JW3H -	0.062	
N.	אַאַכָּידַ.	J77.19	0.110	<u>M</u>	1702B -		0.01	М
1	3206E - 3	17035	0.108	Ж	J7020 -		0.076	S
Q	J706J .	J704A	0.108	0	J7024 -	J7:44	0.018	
•	3706d .	J704.C	0.090	P	17028 -		0.045	
B	J70/R	3701.3	0.082		707C -		0.049	v
R	J'70cF -	J704N	0.155	R	J7024 -		0.081	R
3	J776X -	J704R	0.097	S	17028 -		0.046	5
7	J 706b .	J704T	0,031	2	J702C -		0.036	7

TIMITY CHOCK:
All sirguits indicated continuity . . . You bo See Notes

4.2.1.le +40°F@ 45% Z.H.

("town 7-3/-59 Test Engri R.T. Mobiley Report 7A2236

IBAP Insp: NA

POLTAGE I	UKU1:	Minimum Control	Voltage (:	25 Y.)			
	Switch in Sau	Armal Position		Switch L	Intere	al Position]
Ma His	CINCALL	DATA	Set Sk	CIRO	n T	LATA	1
	מנפרנ - שנסרנ	0.091		J7014 -	17010	0.143	
	J706F - J705L	0.119		J7014 -	J7051	0.151	
	17061 - 1 1735K	0.140	2	77014 -		0.174	
	J7065 - J7051	0.1440.11	1	J7014 -		0-154	
1	J706R - J705C	2.111	1 8	J7014 -	J705C	0.150	
7	1706E - 17034	0.067		J7021		D- 140 now	0.0
0	3700c - 5773D	0.105	G	37028 -	<u>-</u>	0. 065 MAN	
H	TC" - 125T	0.076] }	J7023 -1		0065 MgW	
1 .	17764 - 17930	0.100	7	1	J703C	0.002 no	~~~
J	77261 - 1723K	0.061	J	I 77033 -1	J703K	0.002 now	0.0
T.	ענכיי, - אפרי		8	17724 -	J:03L		0.0
L	אינסדע וב אפסית	T	1	Inca -	J703X_	D-140- 40W	
X	37044 - 3701P	0.114	1	77013 -		D. 065 Haw	
Ä	المدارية - المجاورية	0.110	1	7703 -	<u>שלנה.</u>	D. 082 400	y
L	57762 - 37044	0.102	0	I 570al -	J774A	0.076	
P	1 7761 - 1 7746	0.031	P	Τ'''	THUS	0.044	
4	27.65 - 27.62	0.085		1 10202 -	7777 J 1	0.048	
R	17007 = 1704N	0.113	R	1 37024 -1		0.080	
S	77067 - 3"17LB		6	minna -	J7"!"	0.045	1
7	Legel - Leger	0.084	1 	77025	<i>37(4.</i> 3	0.035	1

CONVAIR ASTRONAUTICS

TEST CONDITIONS AND PROCEDURES: (Continued)

Mroet 742236

eragraph	Specification Requirement	konerko
1.2.1.1c	-30°F@/mm Hg. Re-run of ool.	
1.4	Start 16.4 hrs. Stop 16.8 hrs. Assembly Cycles 8 Start hrs. Stop nrs.	

2. SPECIMEN TEMP. AT END OF PROOF CYCLE

+13°F

Likey Sy

ltage	fara b.1.8 stop	(seconds)	(seconds)		ably cycl
107		395	- Int		
30y		1204	1.00	-	
	-	110			
30V 25V	 	163	2	+	
257		11.4	2 Max		
l circu ATION & l circu H CONTI	REISTANCE: ite smasure	d greater t	Could han 10 mago	t dores not do	☐ ¥0
l circu ATION & l circu M CONTI	its satisfa <u>REVETANCE</u> its smasure MUTSCARD A hos saliafa	d greater t	Could han 10 maga		
l circu ATION & l circu M CONTI	its setisfa RRISTANCR: Its smasure	d greater t	Could han 10 mago	not do	
l circu ATION & l circu M CONTI	its satisfa <u>REVETANCE</u> its smasure MUTSCARD A hos saliafa	od greater t	Could has 10 mago	not do	
l circu ATION & l circu M CONTI	its satisfa <u>REVETANCE</u> its smasure MUTSCARD A hos saliafa	od greater t	Could has 10 mago	not do	
l circu ATION & l circu M CONTI	its satisfa <u>REVETANCE</u> its smasure MUTSCARD A hos saliafa	od greater t	Could has 10 mago	not do	
TION & CIPER	its satisfa <u>REVETANCE</u> its smasure MUTSCARD A hos saliafa	od greater t	Could has 10 mago	not do	

POSIT	TO THAT	O'R IDR	(15 2111	iasconds :	maximum)			
Cironit	C.B.C.	a vera	R to Fa		Circuit	C.F.C.	in to Ex	NR to In
P1/_	7	8	7		P/.2	y	3	3.3
P32		6	6.5		P22	Ō	10	8.0
130		1 5	E. 0		P34	В	7,5	6.3
P36	I	ا قت معد	4.5		P/./	0	11	e.c
PLO		12	10.5		P16	R		6.0
P18	İ	8.5	9.5		P28	3	13	11.5
120		1//			Pi		}	
P26	X	<u>ئے ۔ ا</u>	3.5					

FORM NO A-161

FOLTAGE	PROF :		Maximum Control	Voltage ((30 V.)		· vc
	males	in Strarp	el Position		System in late	mel reelster	
SW. MX	CIRC	Tit T	DATA	SK. HK.	C. HOUTE	DATA	
<u> </u>	201C -	17010	0.082		מנסת - ענמד	1 4470127	
8	emer	4.7051	0119	8	17014 - 7706L	1270.149	
G	T .	JAK.	0112	C	77014 - 17705K	0.147	
מ	T -	17051	0.109	l n	7701A - 1705.	0149	
8	יגעיינ	T	1 0 104	1	בירוב בירוב	0.139	
		17024	0.058	r	1702: - 170.3	0.036	
0		1,7333	0.098.	0	1702B = 111.40	0.060	
н		Ling _	0.064	н	770.5 - 770.5 -	0.020	
1		7	0.044	i	77020 = 1771X	0.063	
j	J1961 -	Jona V.	0.053	J	170.10 - 170.1K	0017	
I .	J7066	1.7931	0.045		77024 - 1770:1	0.050	
L	Janea	12238	0/00	L	אונהו ב אנהו	0.053	
X	570 W	377.18	0100	М	170 B - 1723P	0.064]
K	J. Cong	4,770.36	0.100	Ж	. אנמין - ממין	0.064	
0		Jinu _	0495	0	7/221 - 17714	0.072	
P	27.0 √×5	J7040	0,090	P	17025 - 37.43	0 039	
	JOYA	3704,3	0.073	3	נאידנ - סרפקע	0 042	
R	J. ጐድ	4570V.X	0.045	R,	17024 - 17224N	0.014	
S	JTEX	Jacks	0.086	Š	17025 - 17045	0.040	
7	377.6E	J370/.T	0074	1. 1	J707C - 1777	0.030	

All circuits indicated continuity . . . Yes No

& 4.2.1.10) Re-Test -300 F@ Imm Hy.

Dest Sniti RT Mobley

Report 7A2236

		المحاجب وراو	a financia amb i ne managan maga sau, sa	
S ¥A J	lnsp:	NA	SAY Insp:	NA
		Inlantana parameter		and the second

VOLTACEL I	ku!	Minimum Control	Voltage (2	25 V.)	
	-witch_in ix	ternal losition		Switch in Interne	al ios. Lion
Be. Mic.		Latia	المتعاقب المتعاقب	<u> </u>	U.D.
	ומת - מומת	0.085		37014 - Jinib	0.129
. <u> </u>		1.0.118.		J 77014 - , 57051	0.153
	1704 - 1705	E. 0.115	Q.	_ J7014 - J105X	0.154
<u>.</u>	J1752 _ J775	: . 0.108		וארת ב- גוניינ	0.149
K.	. mas 📲 2005	0.106		J101: - 5733	U.142
	. Tiles - (1101	1. 0.054	I.	37024 - 5702A	0.000
<u>;</u>	$\mathbb{Z}^{\infty} = \mathbb{Z}^{\infty}$	0.048	3	בינים - פינים	10063
1	F/NY - 30	1.00k	1	Trops - Tross	0020
<u> </u>	במינים בי באורב	c. J.Q14	1	Troze - mais_	0.065
,	गुल्हा - ३१०३	1 0 054		1 77032 - 1 77216	0.017
X_	נַרִיתָּ - בארת	1 0075	1	जाव्य - जाकार	0.052
	נַרדנַ - יוּשׁריי.	K CLUC	L	J. J. D. J.	. 0.055
<u> </u>	2774 - 2773	P 0100	, R	5733 - 5, OR.	0.065
R	لأنساء أأأ أأمان	2.017	1	" " - " " " " " " " " " " " " " " " " "	. U.070
o _	gradu – jaros	: J.UY5	0	577.8 - 577.A	0.077
P	JT262 - JT24	0,040	P	The second secon	0.040
	1. la - 1. 1. 1.			المناف ال	0.047
R	30001 E 3704	3.049	£	- J. J. J. J. J. J. J. J. J. J. J. J. J.	0.077
ي		3 1 0.057		1 mg - 1 mg/ -	UMA
Ţ	mage -	- 0.073	•	J. 1010 - J. 11	U.03 h

Specimen S/	specimen	CVAC Insp: And And And And And And And And And And
Paragraph	Specification Requirement	Homeres
4.2.1.1 d	+ 160°F Hot test @ Imm Hg. Re-run of This test on SN EOI	
1.4	Operating Time: Start 116.8 hrs. Stop hrs. Assembly Cycles 10 Start hrs. Stop hrs.	

TEST CONLITIONS AND PROCEDURES: (Continued)

Resulter Satisfactory Deter

Notes: 1. Achieved Imm Hg in 4/2 minutes 2. CEC run I to E to I mag #. 159

3. The specimen was inspected prior to pertorming this rest. It was noted that the potting had expunded and was expanded out of the potting nolds. A Hypot fest was run at the end of this proof cycle to veter mine If any damage now been dode to the dialectric Strength which potting determent.

Re-Test Per pare. Zalid Specimen 3/N QUL Kinetics Engineer: Corp. Specimen CVAC Imp. USAF Insp: * Indicates out of tolerance STABLE CYCLE OPERATION: control Fara L.1.0 Time Control Coleranos embly cycle (seconds) voltege step (aboomda) 187 287 167 XX M

All directs satisfactory - Performed at endrest Proof Cycle

All circuits measured greater than 10 megohns - - - YES 50 50

THE CONTRIBUTION AND NOT CONTRIBUTE

All switches satisfactory

Pare	4.1.0		100		Switch position			
نعسا	40	TEE	900 BOL		Internal	Externe		
	Z	$\geq \leq$			\searrow			
		$\geq \leq$						
	1				$\bigg \rangle$			
		$\geq \leq$						

CYCLE SECTEMENT TIME: (20 milliseconds minimum)

External to Internal 38./williseconds

Internal to External Galamilliseconds

PQ# U		ZA IDE.	(15 -111	iseconds	maximum)			
Circuit.	C.E.C.	th Vortx	n to h		Circuit	C.F.C.	In to Ex	Ex to In
P14		9.8	8.05		P4.2	N	1.601	.=",5/
P12	g	12.15	8.82		P22_	0	11.85	102,40
P30		11.05	8.81		P34.	P	1.2.70	14.00
P36		6.30	3.18		P/.4	9	16.40	12.45
2/0		12.60	10.0		<u> 196</u>	R	1 1 Jest	1.40
_ PL' _		8.60	10.15		P.28	5	6.08	11.15
P20		8.30	8.82		PId	1	2.40	
P26		5.70	4.00	}	[

POLTACE	DROP:		Anglaum Contro	l Voltage (30 V.)		AOT		
	Indiah in Internal		l Pogition		Switch in Internal Position				
SHA JIKA	CIRC	7	2474	SH. HE	CLECULT	DATA	82		
<u>.</u>	1701C -	17010	0.108	_	1701A - 1701D	0,147			
B	1706E	- most	0.127	1 8	DOM - LOST	0.122			
<u> </u>	17065	J705K	0.132	<u> </u>	77014 - 17735K	0.173			
D	J706'	J7705J	0.127		17014 - 17053	0.170			
1	J706F	-1775C	0.122		1707A - 177.50	0.170.167			
<u> </u>	706	-1701A	0.100	7	J7024 - J7044	0.051			
0	J706c	_ 1702D	0.123	0	J7028 - J7030 -	0.022			
H	1206X	- 1202F	0.106	Н	770.18 - 17:018 -	0.034			
I	J706a	J''030	0.122	I	77920 - 17930	0.083			
لا	J77768 -	J703X	0:090	j	770.X - 770.3K	0.023			
1	J7706G	-Lmost	0.122	K.	JOZA - JOSE	0.070			
1.	1206H	אַנמינוב	0.130		וויסטע בייסטא	1.076			
M.	1	J7701P	6.141	×	170 B - 1733P	0.084],		
u	J705g	J7035	0.133	И	1702C - 17733H	0.088	1		
0	J706J	-J"",,A	0.130	O	7702A - 7704A	0.084	1		
P	J706d	J7048	0,114	Р	17028 - 17040	0.058			
¥	Jona	3771.3	0.105		.mnc - m 4,1	0.061			
1	Jour	-J704N	0.131	R	77024 - 1772AN	0.089			
S	J706X	-J704R	0, 115	S	17025 - 15704K	0.560			
+	J7066	J704T	0,102	+	J702C - J7713	3.046	-		

CONTINUITY CHRCK:

All circuits indicated continuity . . . Tes No | See Notes

. 4.2.1.1(d) +160°F Hot test@ Imm Hg. Re-run of this test on SNOOL

Test Engri R.T. Mobley

Report 7A2236

CVAC Insp: NA IBAP Inap: NA

OLTAGE DRUIT			Minimum Control V	9	(52 A*)			
	Sylech in	in External Position		4-4	Switch i	n Interne	internal Position	
مللمتا	- व्यस्ताम		DATA		MAL CINC	ULI	<u>iaia</u>	
	J701C - J	תנכי.	0,102		J7014 -	יי מוסע	0.143	
8	TOUR - J.	7051	0.130	1	J7014 -	J735L	0.169	_
	17365 - 1	73EK	0.134	11	J701L -	J705X	0.172	_
0	37065 J	705.1	0.129		J7014 -	20021	9 41.0	_
1	370 68 - 37	2500	0.124	!	J7014 -	J705Q	0.165	L
<u> </u>	rior - i	ACD:	0.098	1 1		J7034	0:051	-
3	17:00 - 5	מניג	0.120	}	3700a -	בנניה ב	0.026	<u> </u>
н	.72c1 - :	O.T.	0.102	1	ma :	JTCJE_	0.035	 -
I	1776a - 3	2230	0.118	4_4		בנכת	0.081	-
J	37361 - 3	7028	0.087		770m -	.733K	0.023	
<u>r</u>	57766 - 5	7031	0.120	1	गार्थ :	J.034	0.069	L
<u>i</u>	7776H = 1.	אַרַני	0.124	1	1.00.4 -	7703H	0.075	_
_н	J7744 - J	2505	0.135		<u> </u>	JOSE	0.087	-
X	The thirty	اد ا کٹ رنٹ	0.130	1	<u> </u>	"muse	0.087	•
Q	<u>. </u>	7044	o.lit		0 J77724 -	1 3 34 L	0.084	-
Р	77264 - 1	מענ	0.110	1	P. Janas	1 5:22	0.057	!
-	i. ci - :	: 111	0.101	! - -	<u></u>	. 2	0.060	Ļ
R	::: xr :	1041	6.126	 	E June	. Jaka	0.087	<u> </u>
<u> </u>	57067 - 3)(5	0.110	<u> </u>	- בירת	, 37 773	0.060	ļ
I	15742 - 5	TOUT	0.100	- f	7 7720 -		0.045	ĺ

CONVAIR ASTRONAUTICS

	se moure: Satisfactory 18 001. Linetics Soif. Specimen	Test Engr: A Mobily CVAC Insp: HA				
Paragraph	Specification Requirement	Remarks				
4.4	Post Accelleration Front yel-	Midwest Recording I - E - I May, # 137 record # & 76				

0.4 Operating Time:

Start 106. hrs. Stop 102.5 hrs.

TEST CUMULTIONS AND PROCEDURES: (Continued)

Assembly Cycles 24

Start hrs.
Stop nrs.

Wire completing atistuctory

THE REAL PROPERTY OF THE PARTY
742236

ltego	fara 4.1.8 step	Time (seconds)	tolerence (seconds)	Impe of ass	
187		130	3 max		A
747		137	100		
30 Y		10/2	2.001		
30Y		igri	2 ===		
25Y		1142	2538		
25 V		1.109	7 max		
cires	TRENOTH: its satisfac Esistance:			YFS	Z.

DOLE SECRETE TIME: (20 milliseconds minimus)

TES

32 willises code

50 milliseconds Internal to External

	IN TRAIS	TR IDE		1 se e cente	mriema)			
Circuit	C.R.C.	Di Torra	n to h		Circuit	C.F.C.	In to Ex	RE to in
_ Pl	1	6.4	4.2		F 2) j	1.5	3.5
_ 13	3	16.4	10 - 2]	P2.2			2.5
PX	Н	-A-A-	42.	³ •	P36		1.5	1.8
	<u> </u>	11:4	1		224			
PA3		12:3	A	Ì	L Fic	<u> </u>	100	8.
F18	I	10.4	6.4	1	Pag	5	·	1.3
_20		1 2	45]	Plii	· ·	2 N	7.2
P36	N N	11.5	13.0	ì				1

POLTAGE	DEOP:		Maginum Control	Voltage ((30 %)	,			70LT
	sedich in External Prairies				Switch in Internal Position				
SM. KK.	CIRC	TT.	Data	Ma His	LI CI	ECUIT	DASA		Bein
	1701C -	17010	0.108		7701A	בנסית -	0.141		
В	1776P	17051	0.069 12	A B	1701A	- 17:081	0.159		
<u> </u>	27767	J725K	2.055.14	<u> </u>	77014	- J705K	0.174		c
_0	1776	J705.1	9.064.15		J7014	- 1705.	0.164		نيايا
	37773	J7725C	NA SOR NO	R B	17014	= 17050	3-NA 5	2	g
	1706	1700a _	0.390] [12021	- 47704 -	0.053		Y
0	j	77020	0.112]		0.000		<u></u> 0
H	1	17075	0.180	H	-	- FOR -	0.037		lı lı
I	5706a -	J70.6	6.108	I		- 17036	0.012		:
J	3779 5 -	J703K	0.032	J	77020	אנמיני -	0.028		J
	J7060	J7021	0.110		77024	٠	0.063		I
	1706H	אנכרני	0.111	L	ב מבנידו	. ארכלע.	0.006		
H.	שאניים.	קינודע	0.104	<u> </u>		- J703P	0.002		-
3	13766	17036	0.110	N	7:020	· Ima	0.275		*
0	37003 <u> </u>	J774A	6,110	0	J7724	- 17 M	0.079		
	J706d .	J7243	1.041	P	17028	- 17740	0.052		F
- Q	JMOCR .	37043	2.019		77070	- 37743	0.051	3	,
1	J706F	J704N	6.118	R	J7024_	_ المندراد -	2.180		R
5	איז דר ד X	7704R	5.078	ä	792b	- 17704E	0.750		3
1	J7.66 .	J724.T	1. MAY	•	בתכדום.		C.C. 9		1

All stroubes indicated continuity . . . Tesk to See to see the

4.4 Post Accelleration Proof in the

S. De Cal FACE TO Mobile Report 7A2236 CVAC Inspa NA Minimum Control Voltage (25 V.) TOLTACK DROP: Switch in External focition Switch in Internal Position CIRCUT DATA CIRCUIT · WILL 0.111 בנמז - זמזם 17014 - 17010 ... 0.196 0.129 1776P - 1705L J7014 - J7051. 0.164 0.142 17061 - 17051 77014 - 1705X J7045 - J705J 0.133 0.161 77351 - 17351 J7068 - J705C NH NH X 37614 ± 37064 17062 = 1203A 0.055 0,012 17021 : 1703A מנמה. إ - 1706c 0,111 6.067 H 2102 11361 - 1.DA J7023 - 1707E 0.040 0.108 I 17736a = 17731G 0.073 more il more 2.093 77065 - 3703X 17033 T 1733K 2.029 0,110 K J7060 - 1 J703L 2.004 17921 - 1903 L אנרדע ב- אפרת Quill 0.003 17021 - TO3H קנוקו - שאניון 0,105 170:3 - 7:33P 5,002 0.118 26025 - 12032 0.016 O 17061 - 1704A J7024 - J704A 0.030 77361 - 1734C 0.054 17028 TI JOUG 2.10 0,060 17:66 - 17:04.1 عيسان لتعديد 1700E = 170W 0.030 J7024 7 J7048 בערת - דפסקה 0.100 0.057 בארקנ - ביוחדע 0.040 J7061 -

e note on 19 of these 3 sheets

B

CONVAIR ASTRONAUTICS

MPMET _78223

4.1 TEST CONDITIONS AND PROCEDURES: (Continued)

seasonal Took Results: Satisfactory	Dates	10	-19-	59
and the second	Test	Engr:	RIT	Medlis
Specimen 5/3 ONL. RIMETICS	CVAC	Imap:	N/A	

Paragraph	Specification	Requirement	Remarks
4.5	Life 1	- +	
	— // (. /		
		· [
	-		•
1.4	Operating Time	•	
1	Start	are.	•
	Stop	bre.	
	Assembly Cycle		••
			•
	Start		
	Stop	hrs.	

voice. 1. The following two data sheets contain
voitage drop data measured at 350 assembly
cycles and at 500 assembly cycles.

TOP A UK MHCH

12 m

()	POLTAGE	DROP1		Hexinum Contr	ol Voltage (29.5 v				MOT.
		end teh 1	e Briarna	Position		Sidion	in later	pal Position		
	34 17	CIRCI	19	DATA	SN. HE.	GIR	TITE TO THE TENT	IA7A		SH
		गारा -	J7010	8.103		17014 -	ם בנכתו	124	1	
	. 5	13065 a	J7051	1120	B	17014 ·	TO BL	114/	1	
	3	17061	J705K	1.39	G	77014 -	J705K	154	أسا	
	<u>n</u>	17065	J7051 _	1/27	<u> </u>	17014 -	1705: _	143		
	1	17068	J77250		<u> </u>	17024 -	7050 _	NA	1.	
	,	17068	17034	1088	1	J77024 -	170 H _	1053	1.1	-
	0	170£c	מנסקנ	1108	0	77028 -	J2020	1064		
	Ĥ	1706Y =	TO I	.096	, н	172020 -	J26.4	1040		
	1	J706a -	J703G	1105	<u> </u>	7702C -	17030	107/		
	4	J706g -	J703K	. 080	j	7702C -	1793K	, 0.22		
	K	J7060 -	J103L	1108		77024 ·	703L	,064		
	1	J206H	17038	19		17024	ארכידע	1062		
-	X	J7064	קב מיתן	1104	N	77028 -	J703P	, 261		
	1	J706g -	7707R	·11+	. 31	77020 -	JYO JR	.07.3		
	0	J706.I -	₽7 043	115	<u> </u>	JOZA -	177	1082		
•	1	371Yas	J704C	ک۶۵.	1.	77028	137040	.052		
•	Q	37. YER	37013	1092	9	77070 -	נ,גרר!	.058		
	8	J'MOF	⊇XC4¥	.115	R	7792A -	JYOZN	.081	1	
	3	J 7/2 -	J704R	1096	S	17028 ~	J770AE	,055		
		7796h	37(4%	1089	Ţ	J702C -	DO.T	,040		1

All sirguits indicated continuity . N. Tes No See Notes

Life 1851: Voltage drop: at 350 assembly cycles, control voltage at 29.5 volts just reading in the ext position, made one assembly cycle to int. position.

Cant. life cycling of specimen

2. Voltage drop measurements mude the normal way, using test act.

Date: 19 At 1959
Test Engr: E / Markley
CVAC Inap: NA

Page 50

Report 7A2236

ISAP Inap: NA

	FOLTAGE L	ikur:	dinimum Control	Voltage (2	5 V.)	and the second second second second second second second second second second second second second second seco	1
		Seleca in latern	al Position		Switch in interra	l Posttion	1
	AN HK	CIRCITA	DATA	SHE MA	CINQUIT	TATA .	
		מנפדנ - סנפדנ	NA	1 1	1701A - 1701D		
	<u> </u>	17065 - 17051	+	1	J7014 - J705L	raine and in the same and	
		17961 - 1795K.			_ 1701/_ = 1705X		
		J706S - J705J			J701A 0 J705J		
	3	J706F - J7050			J7014 = J7050		
	F	1706E - 1703A		I	J702A . J703A		
	C	J706c - 3D		6	37028 - 3703 <mark>0</mark>		
	H	17001 - 100F		1	1702E - 1703E		
	1	1706 - 17030		1 1	Lecal Saout	_,	
	J	17068 - 1703K		1	1 07000 I 0701K		
-		37060 - 37031		7 7	J7024 - J'034		
	-	J7068 - J703M		<u> </u>	177024 - 7703M		
	N	1706W - 1703P			1777) - That.	<u> </u>	
		\$ 1706E = 1703R		S	Those of Those	: • • •	-
	0	1 J 7 62 - 1 7 74A		. 0	J J1154 - J JOA.	\$ • • • • • • • • • • • • • • • • • • •	
	P	1 17061 - 1 57040			Januari Musica		
		1706 -4 110-1			المسارة وتستياناه		
	R	17X2 - 1704N			_ Januari anaka d		
_4	3	1706X = 1")4R		, .	1 277/3 - 277/3		<u> </u>
		J77:1 - 17:2/17	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		_1700 <u>- 7I</u>	<u> </u>	 :

FQEMS		exh bego					Z		analar ga	
				Directly	De 10.	55 CON7 130.4 1	AC 15	at 500 cycles	\$	WOLTAG
	PLANT.		a Partarna	The same of the sa		·	in Inter	ral Position	1	
	SHAME.	CINC			SM. MX.	CIRC	!	DATA		94.
	A A	27010 -	J7010	-033	A DA	1	7701D	.053		A
	3		J705L	.072	В	77014 "	J705L	.055		B.
	E.	J7067	J705K	. 039	С		F705K	055		С
	77	J7065	1705.1	• 046	D	T	J705U	.056	44, 61	0
a mad ribbania. Isa ia gan	5	Y	1705C	This circuit NG	8	1701A -	7705C	This circuit	VG	B
والحول ميد ستهديد	7		1703A	.007	7		F2021	:0//		P
\$-0.000 m 0	0		J703D	.007	0	-	J7033	1009		0
- 1840 - Carlotte - 1840 - 1840 - 1840 - 1840 - 1840 - 1840 - 1840 - 1840 - 1840 - 1840 - 1840 - 1840 - 1840 -	R	1706Y -	12037	.007	H	77028	570.75	.010		H
magazine (1) is.	I		J703G	.007	I		7703G	•011		I
•	J	Y	J703K	.013	J		J703K	.009		J
	X	J706G -	J703L	.007	K		1703L	.014		K
	L	J206H	J203M	. 207	L	1702A	J703M	.010		
	1	J706W	J703P	.005	H	P	J703P	.012		н
•	!	J706g	J7032	.006	M	T	J7038	.011		M
	0		J704A	.007	3	1	J77744	.010		0
	,	J706d .	J704C	.010	P	T	J704C	.011		Ρ
	0	37060 / .	3704.3	.006	0		J70kJ	.010		
	1	J''067	J704#	.010	R		T	-011		R
	6	J706X	J704R	.008	3		J7048	.012		S
	2	J7066 .	J70.,.	.006	1	J702C -	J704T	.010		·
u		CONT.UNI	TTY CEPCK		,		-			
	İ	All	distalta	indicated continui	w. N	A Too	lo _	See Notes	1	
			1	1				•		
•	Ī	Į	} ±	. Velta	143 0	TOD .	readin	igs mude	at	Cac
	i i						1	The state of		
			•	, <i>9</i> †	nite	دم ا	+ 0	ire by ac	100	
			;	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	to for	1 115	y + AV	note which		
•	*	:		icin	2013	(1 5 4 4 5 4	7 6 3 327 A	columns)	lum	/
	•	1		doing	? ~ t d :	1 Carp .	ان م	, p y	1	
	•			<i>'</i>					Ų	

Date: 11-6-59
Test 3ngr: R.T. Mo.

Page 51

Report 7A2236

			CVAC I						p: <u>////</u>		
	VOLTAGE DROP:		Minimum Control Volte		1400	(25 to) - Made using lot set up				y at	
		Switch	in Exten	pal Position		S	witch i	n Interru	al Position 350	Cifins	
	DW. MX.	CIRC	UIT	DATA	الم الأ	W.	CIRO	ULT	LATA		
		7701C -	J701b	0.105	1]	7014 -	JY 1D	0.121		
	<u> </u>	J706P -	J705L	A-1040.123			701A -	J7051	0.14/		
		17067 -	17/25K	6.423 6.136	1 4		7014 -	_J705K	0.141	·	
		J7065 -	J705J	0.134			701A -	J705J	4.144		
VG.	B	J706R -	J705C	NA.	3	J	701A =	J705Q	NA		
	7	J706Z -	1703A	0.090		1	702A	J703A.	0.057		
	0	J706c -	מגנית.	0.098	•	3	7028 -	מנותו	0-259		
	Н	J7061 -	J'/03F	0.100	1		702B	J703E	2.2+1		
	11	1705-	3703G	0.053	1 1		7020	J7035	0.26+		
	j	J7065 -	J703K	0.010 116	1		7032	J7038	0.320		
	K	16C -	J773L	10.110	1		7722A =	J7031	2.001		
	L	J 36H ==	J773M	0.110	į	لىــــــــــــــــــــــــــــــــــــ	7024 -	J703M	1000		
	М	3706W -	קר נוקד.	6.150			ማን:3 🍨	. Wall.	13.027		
	N	J706g -	3703R	0.110			בוניטלנו –	المقاتسة	2.361		
	0	J7:06J -	J704A	0.110	0	Į.J	7024 -	J7044_	9.030		
	P	7706d -	J724.C	0.100	P		722B E.	ma.a	2.0,3		
		17068 -	1707.1	0.014			أحسنضتانا	17641	3.050		
	R	1706F -	1704N	0.125	1		77724	J70411	3.03+		
	S	J706x -	J. J/B	6.120			ma23 -	777	0.000		
I	7	J706b -	JT0/T	0.513	1	a	7012 <u>-</u>	J704I	0.043		

4.1 TEST CONDITIONS AND PROCEDURES: (Continued)

Paragraph Specification Requirement

General Test	Hornico: Satistactory	into: 19 July 1954
Specimen S/#	Kineties Corp. 002	test lings: R.T. Mobiley CVAC Insp: NA USAF insp: NA
	•	COAT THEFT

1.4 Operating Time:

Start 101.8 nrs.
Stop 108.3 nrs.

Start NA hrs.
Stop And hrs.
Stop

num. 1. An Initial Sanstactory tertormance list

and Ambient Conditions that yell alone

run on this specimen 4-14-34, and the

specimen tailed on the laster test. The specimen

was Iked and sent to the Knoor for repair.

Ust a star shell not made.

SAN 4 1 197

.. Specimen 5/N and Kenetice Engineer & Mart R. T. moley Cosp. Spleinen CVAC ISSPI-CLE USAF IMED: Na * Indicates out of tolerance ASSEMBLY CYCLE OPERATION Control Para Lal. 7 Control tolerence of assembly cycla voltage step (seconds) (seconds) 187 184 **30**y 144 3OV.

DIRLECTRIC STRENGTH:

<u> 25Y</u>

All circuits satisfactory - - - - - TES 30

2 max

THRUTATION RESISTANCE.

All circuits measured greater than 10 megohus - - - YES 500 HO

SHITTCH CONTINUES AND NON-CONTINUES

All switches satisfactory

Para 4.1.8	YES	NO TO	Sylich r	orition
aten		gee nove	Interna)	Externe
	\mathcal{N}			
<u> </u>				

CYCLE SPADENCE TIME: (20 milliseconds minimum)

External to internal Od milliseconds.

Internal to External Limilliseconds

POSI	LOW THANS	THE TIME	115 -111	lacconda	maximum)	-		
Circuit	C.B.C.	in to ax	R to Da		Circuit	C.F.C.	is to be	by to In
P1/.	r	alls	elestoi.	FFV	P1.2	N	Six	
P32	G			/	P22	Ó		
P30	I H				P74	1 - 1		
P36	L				24	3		
P/.0					716	R	-	
P18	X				P28	5	 	
P.0		L.K.	'		PJ8	ļI	<u> </u>	-
PZÓ	N				1			

. ...

VOLTAGE		Maximum Control	r sorrefe (7			VOT.
	section in Externa	l Positien		SAFrep	<u>in interne</u>	1 Position	
SYLUXA	CIRCILE	uii	SW. MK.	- CIE	chin	DAZA	
	מנסית - שנסית			1701A -	77010	- 204	
8	1776P - 1775I	126	H.	J7014 -	J795L	123	
<u> </u>	17067 - 1705K	,123	<u> </u>	77014 -	J705X	161	_
<u> </u>	יברים "מרני	140		TON -	1705.	163	
E	באיות ביאינו	.129	E	17011 -	1705C	1157	
<u>. F</u>	1706R - 1701:	1074	1:	17024 -	1701	.043	
<u> </u>	מבסדע בייסבת	,]] 0	G	J702B -	17070	1067	
Н	TOOK TOTE	.094	Н	77028 -	ישמו	1035	
1	3706n - 3703C	.115	1	1702C -	J7703G	. 075	
J	3706g - 5703g	102	J	7707C -	7:403K	1022	
I,	Jose - Jose _	-101	K	17024	17031	1053	
L	אננדנ ב אאמדנ	.103		בביברדו	אנסת	,057	
ж	פינגף אשנינד	115	M	1702B -		069	
<u> </u>	12068 - 12038 -	-113	N N	77000 -	27038	1075	
Q	ביינה ביינה	.110	0	J7724 -	JUL	1089	
Р	57068 5701C	1103	Р	1702B -	132040	1056	
ن	שארנה בייתנים	1103		1707C -	נארנו	,065	
R	2.2017 - 320.77	.118	F.	J7024 -	J7043	,080	
S	J700X - J704R	.108	S	1702B -	J70LR	1062	
+	J7066 J704T	.102	T	J792C -	J70/.T	1044	

All sirguits indicated continuity . . . Ies No See Notes

4.1.8 Tritial Satisfactory Kinetics Corp. Specimen 5/1002

Test Engri Albut/R. Toutles Report 7A2236

VOLTAGE INCI: Minimum Control Voltage (25 V.)

	Switch	in Externa	1 Fosition		Switch in Internal Position				
dein MX	CIRC	III.	DATA	SW MA	C_TRO	WI _	LAZA		
	7701C -	roin].0.1		J7014 -	J701n	1156	L	
<u> </u>	J706P -	77051			77014 -	J705L	169	!	
<u> </u>	17061 -	J705 K	ما در ا	<u> </u>	77014 -	J705X	المطلب	i.	
<u></u>	J7765 -	J705J	,144		J7014 -	J705J	.163		
ĸ	J7068 -	J7:05C	:129	<u> </u>	J7014 -	J7052	1156	L	
F	J706E -	:7034	1075		J7324 -	J703A	. 044		
0	J706c -	מננית.	110		J7028 -	27030	1068		
1i	J726Y -	, जम	1097	1	J7023 -	J703F	, 836		
I	J726a -	17030	113	t	.mac =	7233	1076		
J	J7065 -	1.55K	1087	3	17032 -	7707K	1023	•	
X	J706C -	J793L	1102		77721 -	TOIL	1059	Ĺ	
k	1706H -	אנפקנ	1168	l l	J7024 -	J703H	1067	Ĺ	
н	J706U -	J703P	.115		.πo::3	ביטוף ב	1070		
N	1200E -	,7°078	1118	*	- נדייות	אַנְמִינּ	072	i L	
O	೨೦೦೮ -	3.044	مالاح	0	J7024 =	JEGAA	1029		
P	17062 -	700	<u> </u>	P	J7025 -	T	1056		
	min -	273.4	108		_ J2333	3743	1065		
R	1706F -	J7048	114		37321	1			
ડં	J706X -		1108	5	Esony	27 21.9	1062		
Ť	37761 -		1102	1 1	.7700C -	TOUT	1045		

002

B

PART 55

4.1 <u>TEST</u>	CONLITIONS	AND PROCE	DUNES: (C	ontinued)
-----------------	------------	-----------	-----------	-----------

Specimen S/N DOZ Kinetics Corp. Test Engr: R.T. Mobicy
Specimen S/N DOZ Kinetics Corp. Test Engr: R.T. Mobicy
Specimen USAF Insp: NA

Paragraph	Specification Requirement	Remarks	
4.3	Operating Vibration	Accellerancters	
	"Y" Hxis	# 1 Droc	,
	,	#-2 X	
		3 Y	
		+ Z	
		5 pipper	
1.4	Operating Time:		
•	Starthrs. Stophrs.	•	•
	Assombly Cycles 6,		
	Start hrs. Stop hrs.		}

2. made switch transfer @ 215 CPS on may sh 159

2. made switch transfer Int. Ext. Int. a end of run

3. When the data reducted, the run looked good.

NVN, 4 221

CONVAIR ASTRONAUTE 5

4.1 TEST CONSITIONS AND PROCEDURES: (Continued)

General Test Maguits:	Deto: 7-20-59
Specimen S/N 000 Kinetics Specimen	Corp. CVAC Insp: NA WA

Paragraph	Specification Requirement	Henerks
4.3	Operating Vib.	#1-Droc
:	Z"Axis	2- Y" Axi
		3 - X" Axis
		4 - "Z" Axis
,		5 - pipper
	•	
1.4	Operating Time:	
	Start // C.Ohre. Stop // S.Shre.	
	Assembly Eyeles	
	Start hrs.	
•	Stopnrs.	

The switch total a 120 CFS Int. - Ext. - Int.

5-125 CFS Midwest May # 137

2. It was determined at about 200 CFS that CEC-mtr. switch was in wrong position which meant me meant of meant of many south of this was all be not that a contract of the standard of the standar

·

CONVAIR ASTRONAUTICS

MPERT 73.2236

4.1 TEST CONDITIONS AND PROCEDURES: (Continued)

Specimen 3/8 002 Kinetics Corp.

Specimen Specimen

Test Engr: P.T. Mbblay/L. Harisa
CVAG Insp:
USAF Insp:

Yaragraph	Specification Requirement	Remarks
4.3	Operating Vibration	#1-Drive
	"X" Azis	#1-Dnoc #2-Y'Axis
		#3-X"Axis
		#4-2 Hxis
1.4	Operating Time:	·
	Start 110.5 hrs. Stop hrs.	• •
	Assembly Cycles 4	
	Start hrs.	

Motor 1 Made SWITCH TYFER 10 140 CPS INT-EXT-INT 5-250 CPS MIOWEST MAY 20137

2. 250-500 CRS. ERROTIC MOVEMENT OF

PAPEL NAS NOTICED DURING THIS PERIOD.

AT 5-0 CRS PAPEL MOVEMENT COMPLETELY

STOPPED AND TEST WAS STOPPED.

200 M NO € 102 1

CONVAIR ASTRONAUTE S

	1	THUT CUBLITIONS	AND PRICE VEHESI	(Continued)
--	---	-----------------	------------------	-------------

Conversion to se mouse : Satistactory	- Z= Z4 - 59
specimen S/N DOZ Kinetics Corp. Switch	Test Ingri R.T. Mobice CVAC Inspi USAF Inspi

	Yaragraph	Specification Requirement	Nemerks
	4.3	Post Vibration	
		Proof Cycle	·
í		,	•
:			
,			
	1.4	Operating Time:	
		Stert //3.0 hrs. Stop //3.3 hrs.	
		Assombly Cycles &	
		Start hrs. Stop nrs.	

Int. Ext. Int.

(-4 +1 f.85

JONVAIR WASTRONAUTICS

Internal to faterual

PAGE 59

A	CACIR OLEFVII	(IN)			
	Para U.1.8	fine	(seconds)		subly cycle
tage	acep		<u> </u>	Into to ix	Ext. to in
187		206	2 200		+
LOY	 4	135	1 Fax		
3CY			2 200		
30Y 25Y	-	1200	2 ===		
23 Y	<u> </u>	The state of the s	2.33		
25V Thic eiro	STREN.TH: wits satisfied RESISTANCE:	·	2 max	TFS	100
ZSV TAIC eiro HUN ciro	wits satisfied RESISTANCE: wits measured THIPPE AND NO	i greater i	than 10 mego		
Z5V TRIC eiro THON circ	wite satisfied KESISTANUR: Wite measured TRUPER AND Ma	Nacoutimi	than 10 mag		
TAIC eiro	wits satisfied RESISTANCE: wits measured THIPPE AND NO	Nacoutimi	than 10 mago	oh ma 1 5	
TAIC eiro	wits satisfied RESISTANCE: wite measured TRUPPE AND No ches satisfied Para U.1.	Nacoutimi	than 10 mago	tch position	
Ric eiro HUN cire	wits satisfied RESISTANCE: wite measured TRUPPE AND No ches satisfied Para U.1.	Nacoutimi	than 10 mago	tch position	

MSI	ION THANS	Zi Iliai	15 milli seconda	mariama'			
Circuit	C.M.C.	In to Ex	n to In	Circuit	Luan No.	In to Ex	Er to In
		All	distactor,	_ F	N	Allas	in the trans
P.43	3			P 14		<u> </u>	
FIG				-		-	
110				Pli		* +	
Pen				P33		- Z	
1770	<u> </u>		المراجعة الم	<u> </u>	• ·	*************************************	A. .

6 milliseconde

WOLTAGE.	DROP: Maximum Control Voltage (30 V.)							
	Britch in Briarnal Position				Switch in later	ton in Internal Position		
SHARK	CIRC	1019	DATA	SH. HK.	CIRCUIT	DATA	Bua	
_A	27731G -	17010	112		מנפת - מפת	183		
8	Janes -	4 17051	.116	В	77014 - J.W.L	169		
2		J705K	114	ع	J7014 - 1705K	146		
מ	13776	J705J	119	n	77014 - 1705.	148		
8	Jプウ(よ	J7750	127	I_R	1701A - 17050 _	1145	B	
y	170/4	120:4	.074	7	7704 - J704 -	044	y	
a		-57020	.108	0	17028 - 1770 an -	0:5	3	
Н	1	Imor _	.094	Н	770.18 1720.15	.034	H	
ĭ	מנארינה	72.2.5	,125	1	77, 30 - 177036	073		
J	J7068	. J703K	.097	J	77778 - 17738	.022	J	
K	J706G	J7031	100	K	1702A - 1703L	. 055	K	
L	17068	-1703H	.102	L	בי מנכיד - ביניד	.097		
X	J776W	177 p	126	×	170 LE - 1703P	066	М	
Y	1706	J703	.118	M	770.20 - 771.3h	. 069	N	
0	J2(4,3	J7704A	111	0	177.24 - V 44	. 088	U	
P	J706d	J7040	-111	,	17/128 - 137/143	.05/	P	
· ·	JUNER	377/3	104		מרית - מיית	. 059		
R	J 706F	-13704N	155	8	17024 - JUZN	,081	X	
S	† ; J776X	-J704R	.150	s	17924 - VI A	. 054	3	
•	17065	J704T	100	•	5707C = .77_/.3	. 040	7	

All eireaits indicated continuity . . . Yeak No . . . See Notes

4.3 Post Vibration Proof Cycle Cinctico SNOCZ

13 Date: 7-24-159

Report 7A2236

Test Engr: E.T. Mobley
CVAC Insp: NA

EAF Insp: NA

OLTACK DRUF: Minimum Control Voltage (25 V.

VOLTACE DRUFT Minimum Control Vo			Voltage (2)	oltage (25 V.)			
1	Switch in Briernal Position		Switch in Internal Position				
Jan His	<u> cisett</u>	CATA	SHETA	CIRCUIT	LATA		
	מנכית - שמת	. 294		37014 - 1 J7018	15.6		
1 11	. 170LP - 170SL	120		17014 - 1705L	.155		
	17061 - 1705 K	1115		. J7014 - J705X	149		
1.6	17765 - 17751	123		37014 - 37053	149		
8	J7068 - J705C	121	1	J7014 - J7050	114		
7	5706E - 3703A	074		17024 : 1703A	,046		
0	פנרי שייסט	108		פנחת - בינדי	.066		
11	727 - : 27	. 096		17013 - 170TE	.035		
	776a - 77010	.110		3702C 1 3703C	070		
J	37065 - 3703K	279	1	77005 T 7733K	,023		
I	27766 - 2773L	100	1	77024 - 17034	.055		
	אַנַנרָנ - אָאַנרינ	104	1	אנסמ - גנכת	065		
М	J7064 - J701P	112		37013 - 570 P	.067		
И	المقرئية أحاكباتها	.115		בניתו - ני הווי	.070		
o	गांक्य - गांक्य	114	0	57004 - JUGA	. 088		
P	מערה - אצרה	.103		2725 71 1722	052		
	2014 - 2014	100			.060		
X	1706F - 170LS	.118	R	7/934 71 7/948	.090		
Š	FIC 1: - 1600CL	1100	5	J77 3 -1 37714	055		
T	770x 2 - 770x 7	100	1	7/1:C 70.1	240		

4.1 TEST CONDITIONS AND PROCECURES: (Continued)

General Test Assults	See Notes 1 \$ 2	Dates	7-28-59
Specimen S/N COZ	Kinetics Corp. Specimen	Test Angra CVAC Inspa UGAF Inspa	7-28-59 R.T. Mool: 4 NA

Paragraph	Specification Taguirement	tenerks
4.2.1.1	Radiant Heat	Max. ilen-operating temp. was 152°F
1.4	Operating Time: NA	
	Start hrs. Stop nrs. Assembly Uyoles . NA Start hrs. Stop nrs.	

Being Ber #8. The unit was subjected to the test per 4.2.1.1 ancierret of per in the Being Bex Mal
pering - N 701. The Being Bex Mal
tanetimes ind the temperature roce

tion 1-5 F to 250 in 50 minute time.

2. The Dox was repaired and the rest

lant on 1-28-31.

·WAM PO T ATTI

PART 62

CONVAIR JASTRONALTICS

General Test Constitute And Philosophies (Constituted)

Constant Test hospital Subjection Subjection 3/8 002 Kinetics Corp. CVAC Institute Affiliation Specimen Subjection Subje

1.4 Operating Time:

Start 117.6 hrs.

Start ______hrs.

Start ______hrs.

Norm: 1. Specimen temp. at beginning of proof cycle - 34°F

1,14 My & 02 t

CONVAIR ASTRONAUTICS

PAGE 63

Pars.	All	1. (18)	_	al V.	a L'aDate	۔ ج	4-59	
For y	ere, S	out of toler	men 5/N .S	OCI KIN	Kngl	100F:	P. J. M.	epley
<u>.</u> .			copp.	Specia	464 CVAC	Imp:	X/22	
• • • • • • • • • • • • • • • • • • • •			-		USAF	Insp:	14.7	
		YCLE OPERATI						
1 .			Time	tolerance (seconds)	1 1 W T T M 1	C AB PAR	elava vic	
100	ltage	step	(500 CHOS)	(seconds	Inte	o Ext E	ca to int	
<u> </u>	157	A	232					
 -) AY	4	264	1 202			25	
-	307		257	2 mx				
<u> </u>	30V	-	14	2 mx				
<u> </u>	251		142	1201				
	25 V		17/	2 200,3				
		and the second second						
		TRAN THE	A			****		
A	LI CLIVE	its satisfac	tory			TES [
THOUS		COTOMANA NA						
		ESISTANCE.		45		WD	Ma	
Y I	rr crrea	its mesured	greater t	orwana to west	OUNE to •	- 155	THE POPULATION OF THE POPULATI	
		THE AND NO		<u> </u>				
Al	ll swite	hes satisfac						
		Para 4.1.	, , , , ,		itch pos			
	•	etep	YES •	ce note In	نت ليعامل	Lected		
		F 5						
		-						
					$\geq \downarrow$			
CACTE	S SOFT OF THE N	CETUKA (?	0 =1331666	ande mini-				
		·						
Ext	armal t	o Internal		111 seconds	•			
							,	
Int	ernal t	o Frtermal	_UL_m1	lliseconds				
PUSIT		NSTER TIME		seconda 🦡	Limm)			
	C.R.C	· DA TOPEX	x to In	Ī		C.F.C.	In to Ex	By to TH
reult	Dan N		_Desc	 -	Circuit	ibea. Io		
P14		All	intacted.		P4.2	Ŋ	IAH Jut	tello.
P32	9		 _/	<u></u>	P22		 	
F30	<u> </u>			-	P34			
£ 36	-			-	. Pi4		-	
Pin	+	-		 -	P15	<u> </u>	+	
P18	<u> </u>			L	P.8	-7	<u> </u>	

GOWVAIR SAN DIEGO

VOLTAGE	DROP:		Version Control	Voltage (30 V.)		, 70
	Seritab in External Position			Section in Intern			
SH. HK.	CIRC	T.	DATA :	SHA HA	CIRCUIT	DASA	
	1701C -	מנסינ	108	A	77014 - 77010	.200	
В	1776P _	J7051	PM 3.7.116	В	77014 - 1706L	199	
	J7767 .	27921	Pam 0 4 3,107	<u> </u>	77014 - 1705K	141	
ם	J776'	J~15!	Pam-035.116	L	J701A - J705.	148	
<u> </u>	37004	J7725C	PAM 014.136	I	1701A - 17050	146	
1	1706	170:4	.070	7	J7024 - J7014	032	
0	J706c	17020	076	o	J7028 - J7079	.063	
H	į	riaur	,072	ä	דנסנד - פנסנד	.022	
1	J706a .	J 3C	165	I	77.72C - 177.73C	.078	
4	J796g	J"10.1%	. 138	J	77020 - 5703K	016	
	ლე6G .	700 M	.091	I	J702A - J703L	055	
<u> </u>	J706H	MECTL	.102	Į.	77324 7703M	.170	
<u> </u>	J7064	37 M	120	8	1702B	.064	
Ŋ	J7716K -	יובררע.	140	×	77020 - 17723R	.070	
Q	J706J	JTTHA	.100	0	5/02A - 57 A	078	
	J706a .	J77746	.09/	P	37928 - 13794C	.047	
Ų	J70ER	377/3	.084	ن	mage - 571/43	049	
R	J70cF •	1701N	.171	R	7702A - 7734N	.077	
S	J776X •	37C4R	.093	S	17025 - 177028	, 050	
Ì	J7:36b .	JOVI	.112	Ţ	770m ',-1 /,-	.042	

CONTINUITY CHECK!

All sirguits indicated continuity . . . Iss No . . . See Notes

4.2.1.10) - 65°F Cold Test Proof cycle 2 - 30°F 30" Hg. Test Engr: PT Mobiles Report 7A2236

Test Engr: ET Mobiley

VAC Inspi NA

SAF Luap: NA

		map1			·
PULTACE I	OROF 1	Minimum Control	Voltage (25 V.)	
	Syllob Ja Drug	rpal Position		Switch in Interna	L Pasttion
Sei ME	ाष्ट्रया	DATA	الشاء العاملة	CIRCUIT	LAZA
_A	מומיו - שנסינ	0.121		J7014 - J7015	.217
<u> </u>	JOSE - JOSE	0.114		J7014 - J7051	163
c	170er - 1705K	0.104	<u> c</u>	7701L - 1 7705X	140
	37766 L 3779.3	7		J7014 - J7753	156
I .	3706R - 3705C	0.118		1 37011 - 1 37053	.153
7	7706Z - 1703A	0.059	1	17024 : 57034 I	.033
3	שנריה ב של של של של של של של של של של של של של	0.095	.s	J702E - J7030	-064
Н	17061 - 1.001	0.070	5	בנמת - בנמת	.024
I	7776 - 7723C	0.195	1	J702C - J703S	C72
J	17061 - 17031	0.066	J	1.7030 1.77218	.017
X	37060 - 37031	T	1	57924 - 5:03L	. 055
L	אנחדע - אספרב	0.105	1	17024 - 7703H I	
X	370/W - 3703P			370:3 - 3703P	.066
4	אנטרו ו- אפטיו	0.100	1	מנית - ניות	. 27.0
0	J7764 - J704x	1	0	17024 - J.C.A.	078
7	77261 - 7724	0.090	P	I man i mais	048
	arcea - i maza	0.083			.054
R	37067 - 37043	0.112	i i k	7/5/4 7 7/5/X	. 677
S	J7057 - J-075	0.090	5	J77.3 - J77/3	. 650
Ť	J7363 - J7345	0.087	***	F20 70.1	040

PART 65

4.1 TEST CONDITIONS AND PROCEEDERS: (Continued)

Specimen JAN ADL Kinetics Corp. CVAC Inopi Specimen Specimen USAF Inopi MA

Faragraph Specification Requirement 4.2.1.ke) -60 °F Cold Test Specimen temp. - 2906 beginning Proof Cycle at ct linin rug -30°F , Imm Hg. Specimen temp. - 5.F it take Perkins De power supply current inted to be it ampores duing uttempted assembly eyell 1.4 Operating Time: Start 117.6 hrs. Stop 116.6 hrs. 'ssombly Cycles

wiese I. I mm @ bio mins

Start ____hrs.

t. 2. @ 26.50. When making transfer from INT. to Ext. witch didn't transfer. The command switch on the test setup was thrown to Ext. position but the Int. light just dimmed instead of going out. a bugging noise was noted untill the command switch was thrown buck to Int.

PAN 66

Para	, 4.1.	9	امر		~ /	ر برر	.Dat	. 6	}	4-39	,
For	pere. I	10/1/	(Fapeo)	3/f		Linete	*ng	imeers			
					5,05	CIMICA				***	
	dicates			nence	•		'XSA	Insp:			
	aisn (ACIE	CPEMI	(OI)							1
1		3	1.1.E	1 .	tolar		Type	of ass	ent	ly cycle	
	oltage	36	◆ P	(seconds) (>> 00					t. to In	
	187			.338			\geq	\mathbb{N}			
	167			<u> </u>	سدا						
,	307	1) 	.037	2.00					$\geq <$	
ON.	30Y	1		192		لمك	\geq	\leq			
146	257			121	1200	SZY.					
X	257	1		- × -	_ 2 ==						
DISHII AN SHITE AN	IATION S Il circu Il svite	Entre shee s	ANGRI BASHTSO AN	E.S.	than 10	ivite.		rition		¥0 ¥0	
				o millioo					_	sti n	•
				× ×						prisin	- ,
POSIT	ION TRA	KSZZR	IDE:	(15 =111	i se conda	mrim	228 }				•
	C.5.C	· Ita	total	n to In				C.F.	<u> </u>	Ru die En	Ex to 15
mu	Then. X	فسأحه				حدد	ule	then_	ـــما		er to is
P14						_ PA	2				-
P12	9					_ P2	2	Č			
<u> 130 </u>	- #					23		F			
P36 P/3	 }-					P/	_	A A			
P18	 	-				Pl		1 3			
20	- -		-			P21		+ =			
P26	·×						٠	 			
. <u> </u>	<u> </u>					·					

•

INCH & BIE

OLTAG	DROP		Meximum Contro	l Voltage (30 V.)		40
	Antes	in Rigina	l Position		Julian in laterns	1 Pression	
Ha Ha	TIR	cotte	DATA	SHA ML	CIRCUIT	CAYA	
	בנרת	בנסיו.	1095		מנסת - בנכדו	1/83	
8	J7716P	4 17051		В	7701A - 7705L	.145	
<u> </u>	J7767	17951	1104		J701A - J705K	137	
ם	1776	Jm53	.112	_ م ا	17014 - 17051	139	
		J7250	1115		17.72 - 177.50 I	133	
1	1.736m	-L1702a	.058	7	J: 24 = 17.4	1029	
0	J. TOLE	-1.70.2D	1093	lo	12. 12.	.060	
<u> </u>	کاف الناب الاطال الناب	1100	,070	Н	ricia : Irou	.019	
1	JT Non	3 1000	132	ĭ	77.20 - 770.00	ال عامان .	
J		- Joon	. 098	J	777.10 - 177738	014	
I.	J7066	377721	1082	K	77024 - 177031	.050	
L	1706H	אנמינד-	1095	i.	57324 - 5733H	.073	
X	JOHN	17:19	1102	N	170.8 - 1703P	.062	
X	To the	- Jongs	1103	N	7702C - 11701A	.066	
0	ไรพรร	450	(60	0	17724 - 17724	. 073	
P	17761	J. 27040	୦ ଝଟ	•	17/25 - 177/25	.044	
4	1. 148		1041		77/4	1046	
2	JYXJ	45"%N	1112	Ř	7702A - 1773AN	1073	
 S	J"25X	77C4R	,090	· S	17.25 - C. DAR	046	
	JAKE	1704.7	1092	•	570xc - 574.7	,035	

CONTAINITY CHICK

All sirguits indicated continuity . . . Yes No See Notes

4.2.1.12) Told lest & Immerty.

0

Deter 8-4-59

Test Bage: Mobiley / West

TVAC Inspi NA

Minimum Control Voltage 125 V.

Page 107 Report 7A2236

SAP Inapt MA

	VOLTAGE ORGII		· comment and address.	Miniaum Control Voltage (• (25 V.)		
		Sattop	ig Pries	nal Position		Seltob in Interna	l Position	
	_ للأحفظار	CIRC	JU	DATA	Sal She	CENOUTE	LATE	
		12010 -	. מנכתו	Because	A. I	J7014 - J7010	1174	
		177KF -	J7051		_ALI	17014 - 17051_	1149	
		17X7 -		Failure Con	8d b	. 77014 - 1705K	140	
	<u> </u>	37756S -	379:3	1	1 4	J701A - J705J	1142	
	E	7.06E -	27050	not get the	4 1	J701: - J7052_	1/37	
		Ticke -	TOTAL	data.		J7024 : J7034	.030	
	0	1705c -	פנירה	1	6	מנרים - פוסדנ	,061	
	li	17201 -	101			J7023 - J703E	1031	
	I	1726a -			1	max frax	1067	
I	J	3736r -	i		;	17000 - 1723K	1015	
	E	J706Ç -	1		1	77724 - J. 1793L	1051	
		ב אַסריינ	7		L	77024 - 7703H	1565	
T	Ж	J704: -	1			3.07 - 510T	.063	
-	×	- عود.	1		1	הנריב - נרודב	1067	
1	0	J-760 -	ì		10	J7524 - J176.A	064	
1	P	77064 -			P	17028 T1 T10/0	,045	
1		Tier -			1		1048	
1	R	17001				JV333_T JV44J		
+	3	J7067 -				FOR - FIRM	1074	
	-	3700 -			+	J7023 - J7064	544	
-	~~		معتصل	·		ring - nai	1035	

4.1 TEST CONCITIONS AND PROCEDERUS: (Constaued)

Specimen 5/4 CO2 Kinetics Coff. Test Engr: P.J. Makling USAF insp: WH

Faragraph	Specification Requirement	Henarks
4.4	Operating Acock	The specimen coes mounted on CEVAT and run per spect to mee roo. ind once record in end unis
1.4	Operating Time: ///r. Stert hrs. Stop hrs. Assembly Cycles /4 Start hrs. Stop hrs.	

in creatings indde during 30-10. Find in creating stores food for all 6 1415.

2. His switch transfer time and typh seguines are at the east of each stores of the east of each stores.

124. Data for have son the next spayer.

REPORT 7A2236

			+ "-	-" Hels	* -	"Z" Axis
	ر اد ند	6				
Pare	. 4	20 K 4	/ nimena S/N (462	Date:	I.T. Marl of
	,		RIACT	tis BIX	CVAC Imag	ol
• Inc	dicates	out of tole	Pance		USAF Insp	: <u>/ / / /</u>
***		YA YA YA YA YA YA YA YA YA YA YA YA YA Y				
	ontrel	Para 4.1.5	2	(seconds)		membly cycle
		step	(\$40,00073		into to Ex	d Ext. to lat
 	10	<u> </u>	1	1 22		
j -	18 y	<u> </u>		1 mi		
-	307		+/V /		+	47
-	_30V _25Y		1	2 507	+	
-	250	+		1201	<u> </u>	
-	-	····		- Au	and the state of t	
			CONTRACTOR			
A	ll switch	hos satisfi	sclory			
	4	Para 4.1	• 1		ci poglila	
		_atap			The Extern	4
		-				
		1	7/		-	
2 1 99 71 2 1	r gre inchi.	T PTME		and the second		
Later	T. T. N.	de de la constante de la const	ZU millised	conde minimu		. 12.7
Ext	ternal to	interna!	74	1111see onds	* - * /	A xx = 1.132
) ni	termal to	o External	5 <u>4</u> =	illisecoude		1. 1. 1. 1. E. W.
FUSI1	ምሃ ነው ። ምር እን	NSPER TIME:	18 =4314		`	
	العائد العضا	THE PROPERTY.	Ex to In	seconés pari		In to Ex aven
reuli	Chap I		THE IN	رعاً ا	Devis Jana	
Pi	r	8	3 9.8	ş	P. V	857.865€
P32		7.0 (8 7.5	<i></i>	P22) 8.3 13 6.
DE 1	1	1111	8.5 7.5	Tr.	P 14	173981026
P36	. Y				1 -	
PAN		134 3	1 3 2 3 A	حبد و		5.5 7.8 6.1 5
DYA		10	8 68	;	51/2	5.5 7.8 6.3 5 8.4 1 2.8 7.
P1d 20	1		1 8 6 8 1 2 2 4	المدأ	916 918	5 5 7 8 6 : 5 8 4 3 2 8 7 6 5 6 8 6

*# 5 £ 10

CONVAIR | ASTRONAUTICS

742216 % PASE

'ere. 'or p	A.J.	818h	. Speci	Lman S/N		5 C. ny 2	Sn	te:	A.	Z. M	251	
Ind	licates	oet of	toler		N L ELE	3 C CAP	US	AF Insp	:			
455	IMELI (entrel	YOLK C	PERATI									-
						Lerence	Ter	a of as	amb l	A CAL	10	
40	ltage	ate	P	(80000	de)] (e	reconde)		to Ex	7			
	lov					MAZ						
	181	1				25.0						
_	307	1		NA					K PT			
<u></u>	30Y_	1	The Print of the Lot		2							
	251	1				BAX						
	257				1 2	NO.X					7	
UM.	l circu		AND N	Maconty		1 10 mego	hme -	TS	5 Ø	H C	· <u>_</u>	
II.	l circu H CONTI L switc	tite mo	AND NO	Macamu tory	NO.	Lsxi	teh n	ogiti a		*	~ <u></u>	-
UTC.	l circu H CONTI L switc	ite m	AND NO	Macamu tory	N'ITT	Lsxi	teh n			*	~ <u></u>	ב
UM.	l circu H CONTI L switc	tite mo	AND NO	Macamu tory	NO.	Lsxi	teh n	ogiti a		₹) ¥		ב
UM.	l circu H CONTI L switc	tite mo	AND NO	Macamu tory	NO.	Lsxi	teh n	ogiti a		<u>*</u>		ם
UM.	l circu H CONTI L switc	tite mo	AND NO	Macamu tory	NO.	Lsxi	teh n	ogiti a		₹) ₩		-
Al	l circuit.	hoe sa	AND NO.	TES	NUTY See	not Sui	teh p	ogiti a		<u>≁</u> н		בם
Al	l circuit switch	Para	AND NO.	TES millin	MUITZ See	not hi	ich p	oniti a Leive				
Al	l circuit switch	Para	AND NO.	TES millin	MUITZ See	not hi	ich p	oniti a Leive				
Al	l circumit switch	Para Al	AND NO LIGITARY	TES	See	not his	ich p	X A		<u>.</u>		
Al	l circumit switch	Para Al	AND NO LIGITARY	TES	See	not hi	ich p	X A		<u>.</u>		
Al Esta	Skillen Skillen ernal t	Para Al	AMI NUMBER	TES	(m)	not hi	ich p	X A		<u>.</u>		
Al Esta	l circumit switch	Para Ai Ai Ai Ai Ai Ai Ai Ai Ai Ai Ai Ai Ai	AND NO LISTACE IN THE PROPERTY OF THE PROPERTY	7.8-4	willi milli	not his	ich p	X A				ð (
All Ext. Interest Six	Stiffs ernal t	Para Ai Ai Ai Ai Ai Ai Ai Ai Ai Ai Ai Ai Ai	AND NO LISTACE IN THE PROPERTY OF THE PROPERTY	TES	willi milli	not his a minimum aesords secords onds max	ich p	X A		<u>.</u>		
All Ext.	Stiffs ernal t	Para Al	AND NO LISTACE IN THE PROPERTY OF THE PROPERTY	7.8-4	willi milli	not him	ich p	X A				ð (
All Ext.	Stiffs ernal t	Para Al	AND NO LIGITARY OF THE PROPERT	7.8-4	willi milli	not his	ich p	X A				ð (
All Ext.	Stiffs ernal t	Para Al Al Al Al Al Al Al Al Al Al Al Al Al	AND NO LIGITARY OF THE PROPERT	7.8-4	willi milli	a minimum seconda seconda onda	ich p	X A				ð (
All Ext.	Stiffs ernal t	Para Al	AND NO LIGITARY OF THE PROPERT	7.8-4	willi milli	not Sui	Inh p	X A				ð (
All Ext. Int. SIL	Stiffs ernal t	Parm Parm O Inte O Exte	AND NO LIGITARY OF THE PROPERT	7 8.4 15 s)	willi milli	a minimum aesorda secorda	Ich Paris	X A				ð (
All Ext.	Stiffs ernal t	Para Al Al Al Al Al Al Al Al Al Al Al Al Al	AND NO LIGITARY OF THE PROPERT	7 8.4 15 s)	willi milli	not hi	Inh p	X A				ð (

CONVAIR ASTRONAUTIC

PART 742236

+"; " 2xi + " y " A xux

Pa Fo	re. <u>///</u>	Specific of toler	Date: Engineer:	A. J. MI	ck1.		
				s "/*·	CVAC Imap:	184	/
	Control voltage	F	(seconds)	tolerance (seconds)		embly cycle Ext. to Int	
	184			3 max			
	187	à		1 ===			
	3 0Y		Net	2 504	111		
	300	1		2 - 3			
	257	1		9			

DIMENTHIC STRENGTH

All circuits satisfactory - - - - - TES THE NO.

INSULATION ERRISTANCE

All circuite measured greater than 10 megoham - - - YES THE NO

SHITCH CONTINUES AND NON-CONTINUES.

All switches satisfactory

Pare	1.1.0		NO.		Switch o	osition
	1,1,8	TES	000	note	Switch r	Externa
	1					
		-				

CYCLE SECHENT TIMEs 20 millimeconds minimum)

Internal to External 22 milliseconds + - ; Axis E To I 44

Internal to External 22 milliseconds + - ; Axis FTo E 50

14.917	IN THATS	THE THE	15 m111	isecondu	marinum'			
Circuit		in total	w to In		Street	Chan_Pa	In to Kx	Ex to In
F1	Υ	0 5 8	6 35		Park	М	3 5	8 8
Pil	3	8 2.7	125 115		Pal		95 8	16 7
P.30	Н	8.5. 8	11 11		P14		8 7	113 105
236		19 2	10.5 7 8]	P.4	1	1.8 >	β β ,
1743		6.5 6	7.5 7.2		Fil.	P	8 7	8 3
218	X	11 /5.3	3 1	1	L Part	5	ع د 7.	8 3
		2.5. 2	3 7.1		PJd		7.5	2.51 3
P26		13.5/10		Ì		1	1 + Jr - Jr	

4.1	TEST CURLITIONS	AND PROCEULAUSI	(Courinued)
-----	-----------------	-----------------	-------------

General Test Resulte:		^	inter 10-7-	2 y
Specimen S/N	Kractics	iorp.	Test lingri CVAC Inspi USAF inspi	4

Paragraph	Specification Requirement	hemarks
extra Absty	Suit Hillopher	
1.4	Operating Time:	
	Start And hrs. Stop hrs. Assembly Cycles	
	Start hre.	

the gad. Stud hardware was noted to be rusting. A 100 hr. Sat Atmosphere test (per spec. 27-06166 IP 4.4.8) was pertorned.

2. Atter the test, considerable consisten of the subject hardware was notes.

3. After 4.4.3 1st was pertorned a hypet test mas ran. Trein to This broke show a 50 VEMS.

4. Il # 414473 was writty and specimen test was to vender

3

General Yest CONDITION AND PROCEDURES: (Continued)

Control Test Results: Unsatisfactory Dates 6-10-59

Specimen 8/11 12/ United Control CTAC Inspi

Specimen USAY Inspi

NA

Paregraph	Specification Requirement	Remarks
4.1.8	Initial Satisf-	
1 1	actory	·
		and the second s
:	·	
: !		•
: 1.4	Operating Times . 6 hrs.	
:	Startbrs. Stophrs.	•
† •	Associate Cycles 13	
	Start hrs.	:
	Stop hre.	
1		4.1.9

Job E to case indicated excessive leakage current and preakdown at 1500V.

Erechdown warred at appx. 950 VHz.

I COM TO B 100-1

CONVAIR ASTRONAUTICS

208 1 257	_	1 max 2 max 2 max 2 max 3 max	TES		*
DININGTRIC STRENGTH: 211 Sirenits satisfactor DININGTRIC STRENGTH:	1.31 0.82 0.81 0.97 0.97	1 mg 1 max 2 max 2 max			*
DINIACTRIC STREETH SALISFACES	0.87 0.81 0.97 0.97	2 max 2 max 2 max			*
DINIECTRIC STREETH ALL STREETH SETISFACTOR	0.97	2 say 2 say 2 max			*
25V DINISCIRIC STRENOTH: All circuits satisfactor Dishlation Registance:	0.97	f max		□ 1 0 [*
DINIECTRIC STRENOTH: All circuits satisfactor INANIa FION RESISTANCE:	0.97	ž max		□ * ∘€	*
DINIECTRIC STREETH: All circuits satisfactor Distraction Resistance:	ry	* * * * *			*
All switches setisfactor	-	- A A	tet position]	
- Rich			Polester	4	
				7	
				7	
				tone	
TOUR SCOURSOR PINES (20 a	allisser	made minime	a)	-4	
External to Internal	220 ml	Llinesonde			
Internal to External					,
Position Talkatik IDS: ()	مهريناه	seconde ma	termination		all agraphic to the
C.S.C. In Spran	, ,	_	irenit Chan	C. In to B	ar to o
5	6.3	—	P/.2	5	I 6.3
	7		722 0		
	-	bear.	P34 P		1
0		, 100			1
		<u>L</u>	PLI		
	田		P16 1		

FORM NO AZEZ #

70	MANAGE		Profesion Wales and State of S	Negious Control	Voltage ((30 V.)			. NOL 2
	·	me	in Briann	l Position		Selich in Intern	al Position		
	Malia	cina	***	the same of the sa	St. H.	CIRCUTT	DATA	<u> </u>	BKA
	LA	701C -	17010	0.263		77014 - 3701B	0.065		
		27062	17051	0.015	В	7701A - 3705L	0.152		1
		J7061	17051	0.045	G	77014 - 1705K	0.116		C
_		17046	17097	0.039	D	1701A - 17050	0.165		٥
		1706	17098	0.082		17024 - 17046	0.177		B
	1	17049	17034	0.092		7702a = F1014	0.064	4	7
	0	7706a -	17030	0.130	Q	72028 - 72029	0.105	1	0
		1706Y	77028	0.110		77023 - 57025	0.044		Н
.]	I	1	17030	0 125	I	1702C - 1703G	0.100	L	I
- 1	3	J706g -	J7703K	0.080	j	1702C - 1703K	0.040		J
		J706G -	J703L	0.128		1702A - 1703L	0.082	T	K
	L	1706H -	- J703X	0.142	Ĩ.	77024 - 7703M	0.095	I	
			J703P	0.144	I A	77028 - F703P	0.108	1	н
	2	3706g -	- 570 TR	0131	M	7702C - 170 F	0.112	1	×
	0	J706J -	- JAOLA	0.138	0	7702A - 7704A	0.110	•	0
			# J704C	0.094	P	17023 - 1704C	0.059	T	Р
	G	3706a .	J704J	0.089	Q	770/E - 1704J	0.070	T	i
-		5706F a	4770LH	0.142	R	77024 - 1704H	0.110		R
	8		J7042	0.115	8	17028 - 17048	0,067	7	9
	1	₹706b	17041	0.097	1	1702C - 1704T	0.036		7
		COMP DIE	y eg Calada				Harman State of the State of th		
1	!		*	indicated sontimui	, • •	. Yes Ab	Sen Motes	Ī	

Initial Satisfactory

Date: 6-10-59 CVAC Insp: NA

Report 7A2236

ISAT Insp: NA

Setted in Startal Position Set to in Internal Position		AOT SYCE	LAOPI	Minimum Control V	elean (2)	5 V ₀)		
Trois Trois O. 25.3 Trois O. 070			Selteb in Orter	nal Position		Switch in Interna	l Position	
B Frose Frose O, QQ4 Frose O, 113		Ma HKa	CIRCUIT	DATA	SH. HK.	CIRCULT	LATA	
C 17066 - 1705K			J2016 : 701b	0.253		77014 - 1701D	0.070	
D 17068 - 17051 O O O O O O O O O			F706P - F705L	0,004		J7014 - J7051	0.113	
		<u> </u>	17068 - 1705K	0.043		17014 - 1705K	0:116	
			37068 . J705J	0.031		J701A - J705J	0.162	
0			17068 - 1705C	0.014		37014 - 1705C	T	
H J7061 - J7038 O. 101 J7028 - J7038 O. 0.23 I J7066 - J7038 O. 0.77 J7026 - J7038 O. 0.42 I J7066 - J7038 O. 1.15 J7024 - J7038 O. 0.42 I J7068 - J7038 O. 1.38 J7024 - J7038 O. 0.79 H J7068 - J7038 O. 1.30 J7028 - J7038 O. 0.87 II J7066 - J7038 O. 1.30 J7028 - J7038 O. 0.82 I J7066 - J7038 O. 1.34 J7024 J7024 O. 0.82 I J7066 - J7044 O. 1.34 J7024 J7028 O. 0.058 I J7068 - J7045 O. 1.42 J7028 J7028 O. 0.58 I J7068 - J7041 O. 0.86 J7022 J7028 O. 0.058 I J7068 - J7048 O. 1.40 J7024 J7024 O. 0.082 I J7068 - J7048 O. 1.40 J7024 J7028 O. 0.061 I J7068 - J7048 O. 1.40 J7028 - J7048 O. 0.082 I J7068 - J7048 O. 1.40 J7028 - J7048 O. 0.082	4		J7068 - J7034	0.088		J7024 - J7034	0,020	
I 1706a - 1703G O. 120 1702C - 1703G O. 083 J 1706C - 1703K O. 077 1702C - 1703K O. 042 K 1706G - 1703K O. 115 1702A - 1703K O. 019 L 1706K - 1703K O. 138 1702A - 1703K O. 019 H 1706G - 1703K O. 142 1702C - 1703K O. 087 U 1706G - 1704K O. 134 1702C - 1703K O. 082 P 1706G - 1704G O. 142 1702K - 1704K O. 082 U 1706G - 1704K O. 142 1702K - 1704K O. 061 R 1706K - 1704K O. 140 1702K - 1704K O. 082 S 1706K - 1704K O. 140 1702K - 1704K O. 082 S 1706K - 1704K O. 140 1702K - 1704K O. 082 S 1706K - 1704K O. 140 1702K - 1704K O. 082	3	0	J7060 - J703D	0.125		57028 - 5 7030	0.034	
1 17068 - 17038 0 077 17026 - 17038 0 042	- ;	Н	J7061 - J703F	0.101		17028 - 17037	0.023	
1 17068 - 17038		I	1706e - 1703G	0.120		more - more	0.083	
	· ·	1	1706e - 1703K	0.077		1	0.012	
1 1706R - 1703N		K	J7060 - J7031	0.115		,	· · · · · · · · · · · · · · · · · · ·	
N J706N - J703P O 142 J702B - J702R O 0.087 N J706g - J703R O 130 J702C - J703R O 0.082 O J706J - J704A O 134 J702A - J704A O 0.082 P J706B - J704G O 142 J702B - J704G O 0.058 N J706K - J704R O 140 J702A - J704R O 0.082 S J706X - J704R O 111 J702B - J704R O 0.062			3706H . 3703H	0.138		77024 - 7703M		
9 J706J - J704A D. 134 J702A - J704A D. 082 P J706B - J704C D. 142 J702B - J704C D. 058 9 J706B - J704A D. 086 J702C - J704J D. 0661 R J706F - J704R D. 140 J702A - J704R D. 082 9 J706X - J704R D. 111 J702B - J704R D. 062		M	J706H - J703P	0.142		17028 - 170 P		
9 17061 - 1704A 0.134 1702A - 1704A 0.082 1 17068 - 1704I 0.086 1700C - 1704I 0.061 1 17068 - 1704N 0.140 1702A - 1704N 0.082 3 1706X - 1704R 0.111 1702B - 1704R 0.062			J706g - J703R	0.130		J702C - J703R	0.086	
P 17068 = 1704C 0.142 17008 - 1704C 0.058 9 17068 - 17041 0.086 1700C - 17041 0.061 1 17068 - 17048 0.140 17024 - 17048 0.082 9 17068 - 17048 0.111 17028 - 17048 0.062	*	0	J706J - J704A	0.134	0	J7021 - J7044	0.082	
3 17068 - 17043 0.086 17000 - 17043 0.061 17068 - 17048 0.140 17024 - 17048 0.082 3 17008 - 17048 0.111 17028 - 17048 0.062		2	1706s - 170cc	7	1	i i		
3 J706X - J70LR 2.111 J702B - J70LR 0.062		<u> </u>	J7068 - J704J	0.086		1702C • 1707 I		
8 5700X - 570LR 0, 111 57028 - 570LR 0.062		R	17067 - 1704N	0.140		J7024 - J704N	0.082	
1 1706b - 17017 0.094 1 170x - 17012 0.037		3	J706X - J704R	2.111		17028 - 170LR		to a management
			J706b - J704T	0.094	1	7700C - 17041	0.037	-

4.1 IEST COMPLITIONS AND PROCEDURES: (Continued)

Specimen S/H Zinited Control
Corp. 121

Test Engr: R.T. Mobiley
CVAC Inspi
USAF Inspi

Paragruph	Specification Requirement	Romanka
4.3	Operating Vib.	Orly one resonance occurred -
		30G @ 110CPS
1.4	Operating Time: /. 2 hs. Start hrs. Stop hrs.	•
	Start hrs. Stop hrs.	

Second portion of sweep 125-2000 Gps

2. Made Switch Int-Ext-Int it 300ps

3. Made Switch Int-Ext-Int it 300ps

3. Made Switch Int-Ext.-Int at 1200 Cps

4. CEC May # - 5-200 ps #137-250-200 #506

5. Harelernweter outputs recorded cec may. #

26118-504 inch - #1 driet / max, #2 2

#34, #48 mext to pipper, pipper

CHEN NO A WELL

4.1	TEST CONDITIONS	AND PROCEDURES!	(Continued)
-----	-----------------	-----------------	-------------

Constal Test Results: Maryinal Specimen 3/8 121.
Litited Control Corp. Specimen

Paragraph	Specification Requirement	Romerks
4.3	Operating Vib. Z Axis	No resonances occurred
1.4	Operating Time: Start 90.5 hrs. Stop 9/2 hrs. Assembly Cycles 8 Start hrs. Stop hrs.	•

messy. Made switch Int. to Ext. to Int. at 260 Cps. 2. 400 - pur supply oft. bkr. popped out about 270 Cps

3. A considerate amount of hish was noted between 6 - 26 OPS. The hash and changes in voltage drop were great rasugh that a for 111 3 Axes

PML 28 / ...

4.1	TEST CONDITIONS	AND PROCEDURES	(Continued)
-----	-----------------	----------------	-------------

Satifactory 6-11-59 Specimen 5/# 12/. United Cont. Corp. Specimen

Paragraph	Specification Requirement	Remarks
4.3	Operating Vib.	No resonances
· · · · · · · · · · · · · · · · · · ·		5-250 Mag.#187
1.4	Operating Time: Start 9/. 2 hrs. Stop 9/. 9 hrs.	L
:	Starthrs.	•

Made Switch from Int. to Ext. to Int. at 350 gs Made Switch at 1000 cps Int. to Ext. to Int. Oyele Sequence was well within tolerance at 1000,000 Switch and at one of run. Al scotta Truster 3.1 ms it and of run suita.

ASTRONAUTICS

MEL 79

4.1	TEST CONDITIONS	AND PROCEDURES!	(Continued)

Opportune 8/8 121 United Specimen USAF Inspi

Paragraph	Specification Requirement	Penarks
	Post Vib. Proof Cycle & Ambient Conditions Proof Cycle Combined	••
1.4	Operating Time: Starthrs. Stophrs. Assembly Cycles /O Starthrs. Stophrs.	

A showed excessive current leakage and cottage break lown. Breakdown began at about 950 m. I TOR I TOR Break down began at about 950 m. I TOR Break with the 1850 V- Hypot break lown high the Lord on intermittedly.

FORM BO, A 702 !

epest 742236

4.3 8pectum 8/1 /2/ United Cont.

CVAC Imap: --

* Indicates out of telerance

USAF Dasp:

SSIBLI	ICIA OPPATI	CA			
Control Pare 1.1.0 reltage step		TIES	(escense)	Tra of aud Int. to Ext	sably arals Fri. to Int
		115/11	N. Z		
	4	14.56 45	J. mar		
307		849 is	2 max		
300	1	715,5	2.002		
257		LOLON	P. MAR		
257		8598	I had		

DIRICTRIC STOCKIONA

See Noie: *

All eircuits satisfactory -

10 NO.

DESITATION RESTETANCE

All circuits measured greater than 10 megahas - - - IES | NO | NO

SALTCH CONTAINING AND SOMEORYDICATE

All syltabus setiminatory

Para 5.1.0	TRS	see meta	British :	Cristan.
1				

COLL SCHMALTIME (20 millisve onds minimum)

External to Internal 255 millipsecode

Internal to External 2.72milliseconds

POSITION TRANS		115 2111	see onds				
Circuit Chen. No.	In Service	o to be		Cisenia	C.E.C.	de to be	to be to
PIA	3.2	3./		742	1	3.2	3.
P32	3.3			122	3	3.02	31.1
234	1.3	3.1		24		38	3.1
PIB I	3,2	3.1		P26	8	3.2	34
220	3.3	31		276		3.2	

	OLFACE)	DEOP:		Marciana Cont	rel Voltage	(30 ₹.)				V
			Richard	1 Pecition		Sidten	in Intern	al Positiva		Į
le		ether	3	MEL	TATA IN ME	CYR	WIT	DATA		1
	_A	17010 .	17015	231		- A1071	77010	.06/		ļ
L	3	7706P	17051	133	В	7701A -	J7051	111		ļ
L	6	37067	J705K	1 14		17014 -	F705K	112		1
L	D	17065	J705J	14/	a	1701A -	17050	113:34		1
L	B	1706B	17038	177		1707A "	7msc	.215		ļ
L		17068	1703	1091		17024 -	J7074	073		1
L	<u>a</u>	77064	12020	./3	0	17029 -	17079	40		1
Į.	1	1706Y	1707	10		F/028 -	J7025	.030	_1_	1
L	1	J:760 .	J7036	.12	I	7702C -	1703G	.095		
	J.	Jost -	J7733K	070	2 3	7702C -	703K	:042		ļ
	Ĭ.	J7060 .	J703L	1.16		1702A .	1703L	.082		1
	L	LP706H	17076	14-		77024	J703H	.094		1
		J7064	1703P	114		77028 -	J703P	.096		ļ
		3706m	J7038	, 5 1:	, and	1702C -	1703R	105		ļ
	0	J706J	3704A	125	ç	7702A -	TOLA	.//		I
	2	J706d	Trosc	09	P	17028 -	J704C	057		I
Γ	9	J706R	3.7704.3	09	Q	J702C -	170W	1068		
Γ	1	J706F	J704H	13	A	77024 -	77044	. //	1	
	£	J706X	JOUR	. / /	8	17029 -	TAGE	064		
T	•	5706b	TYOUT	.091	7	7702C -	J704I	,034		Ţ
		1	Fes	+ Vibr	ation 1		•			
			チノ	mbient	Conditi	in Pro	net C	yele Comba	ncel	
The second second						1				i
					4				1	
į		-	į.			1	1			
l		ļ ŧ	1	•		•	•		ł	1
-		•		1						
1) 		10		•				,
į			I I	H	1	•	1 2	· •	•	
ĺ		1			<u> </u>	<u>.</u>		<u>.</u>	1	
			1	1	i	:		:	· ·	
À		•	4	,	1	•			ď	

Report 7A2236

CVAC Inspi

MAF Inspi_NA

		VOLTAGE I	ONOP:		Alminum Centrol V	oltage (2)	5 V.)			
			31400	la lister	DEL POSITION		Switch	a Laterna	l Poeitiqu	1
		Ma ME	CTRO	NI	<u> </u>	SM. AX.	CDM	W.T	DATA	
			7771C -	TOID	.025		17014 -	מנטקנ	.057	
		B	1706P ·	JOSL	164		77014 -	J7051	.119	
		C	17041 -	.1705K	139		77014 -	J705K	127	
~		<u> </u>	J7066	J705J	145		J7014 -	J705J	153	
		1	JYCGR -	J705C	18/		77014 -	J705C	217	
		7	7706R -	J703A	.087		J7024 -	J703A	074	
		0	J706c -	סנפית	1.3		J702B -	J703D	.10	
		Н	J706X -	TOTE	10		J7028 •	J7037	029	
	-	I	J706e -	17036	125		Trooc *	17030	.096	
		J	J7068 -	J703E	073		3702C -	J703K	.045	•
		<u> </u>	J7060 -	J703L			.7702A -	J703L	. 079	
			J706H -	J703M	14	1,	J7024 -	1703M	.092	
		<u> </u>	J706W -	J703!	14		.77028 -	3703P	194	
		<u> </u>	J706g -	J7038	.13		J702C -	J703R	.105	
		. 0	J706J -	J7044	128	10	J702A -	J7043	.115	
			17064 -	J7046	.09/		.702a -	TOLC	0.56	
		9 '	1706R -	17041	.091	Q	1202C "	1704.1	070	
		<u> </u>	J706F -	J70AN	185		J7024 -	J704H	. 115	
		8	J706X -	J704R	1.112		3702B -	1704R	.063	
			J706b -	J70/T	.083	7	27020 -	17049	0.33	
1	ł	ř	·						الموسد والمسائل والتناق والمسائل والمسائل	

MFL 82

4.1 TEST CONDITIONS AND PROCEDURES: (Continued)

Caseral Test Results: Satisfuctory

Specimen S/N 121.
Zinited Central

Test Engr: R. T. Mcbl. cg
CVAC Insp: NA
USAF Insp: NA

Paragraph	Specification Requirement	Remai	ke
4.J.l.! b)	Operating Times Starthre. Assembly Cycles Starthre. Stophre.	11me 1880 1915 Padime 2180 2180 2180 2180 2180 2180 2180 2180	Spec. 10mp 73°F 12.4°F 144- 144- 144- 144- 144- 144- 144-

Motes:

FORWING & 782 T

والكنوشية والتسر

4.1	TEST	COMDI	1015	AND	PROCE DURES	(Continued)

Osseral Test Results:	Unsatistactory	inte: 6-17-59
Speciaen S/8 121. United	Control Spec.	Took Engr: 2 T. Mobley CVAC Isopi USAF Insp: NA

Paragraph	Specification Requirement	Remarks
4.2.1.1	-65° F Call	
(7)	t t.@30"	
	Hg.	••
1.4	Operating Times	
	Start 62 2 hrs.	•
	Stop 93,3 hrs.	
, 	Assembly Cycles 12	
	Stop hrs.	

2. The since tailors of en Est is See Ment tot

If the since tailors of en Est is See Ment tot

If mypot is since the retails

CONVAIR ASTRONAUTICS

HEPON: 782236

oliage	TCLE OFFRAT	71200) (sossods)	Iron of	assimbly ore	
18		1.43	In			
1		1.83	1200			
		11.03	LIME.			
		199	1 100			
-13	-	July 1	1200			_
234		1,21	7 802			\preceq
ATION R		d greater (N		ە تا
ATTOLE L1 circu	its satisfe	d greater (
ATTOLE L1 circu	HAISTANCE: Lite measure	d greater (
ATION P 1 circu	MAISTANCE: Lite measure MAISTANCE: Lite measure MAISTANCE:	d greater (
i sirem ATION P 1 sirem	MAISTANCE: Lite measure MAISTANCE: Lite measure MAISTANCE:	d greater (
ATION P 1 circu	MAISTANCE: Lite measure MAISTANCE: Lite measure MAISTANCE:	d greater (
i sirem ATION P 1 sirem	MAISTANCE: Lite measure MAISTANCE: Lite measure MAISTANCE:	d greater (
TION 2 l circu	MAISTANCE: Lite measure AND Mane selicite Fare L.L.	d greator		ich periti		

FORM NO 4-702 I

P32

PAG

PIA

P20

and the second

PAL

P16

PZE

P34

s 1

: [

TOLLINE	PICP!	المتعرب الأنبي الألالي	Maychann	Control	Veltage (30 V.)	·		
	And the last	a Rider	1 Press			Section	in Inter	al Presiden	1_1
Malia	COG	X2	Day		Pia XX.	CI	001	DASA	1_1
A	17010	17010	0.11	20	L	mu	17010	0.060	
1	1706P	J7051	0.14	56	В	77011 -	7705L	0,125	LI
C	J7067	J705K		20	C	77014 -	POSE	0.172	1
D	177048	J705J	0.1		D	47024 -		0.162	
1	J7068	J7098	0.1	55	E	17004 -		0.341	
7	T7000	17011	0.0		7		1702a	6.042	
G		17030		05	0	1.1038 -	77078	8.090	TI
1		77027	-	38	1	12029 "	-	0.021	Y
7	J706e -	J703G	0.00	7	I	-	17036	0.088	1
1		J77033K	7	Organ	1	1702C -	MOR	0.030	I
· ·	J7060 -	5703L		10.07	1		1703L	0.068	1
-		170314	0.11		T .	77724	1703M	0.078	
<u>.</u>	Trock a	7703P	0.11		1	T	703P	0.089	I
	Y	1703R	0.1		E	7026 -		0.093	1
	J706J	J704A	0.4		0		J-7044	079	
	J7064 -	5704C	0.0		- Y		TYOUG	€ 055	
	37068	27013	0.00	T		7	170LI	0,052	1
				0	R	77024 -	7	0.082	1
-		FRAN		88	5			0.071	# 17
-	3706X -	77048	0.0	_ ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1-2	77029 -	FOLE	0.034	# 1
	2706b	77047	10.11	12	 	7702C =	JOAT	U. Valt	-
,					•				1
•	1	TY CONT	₹		• •	- 1	7 _ [A Mass	
	. 411	deficie	indicates	male acc	A	Yen X	الـــا 🕭 ال	See Notes	į
	-	1	10 11	i	10 2	m11 . 1		•	: .
ļ			1010	1es1	(A) -0	3" pry	•		
		-		į	† *				1
ļ	-	1	ł			•	,	i j	1
		•	ļ	-	•	1	1	i	Į.
+		1		<u>.</u>	•		<u>.</u> :		
ļ	1	•					!		1

Dates 6-17-59 CVAC Inept NA

Report 712236

MAY Inspi_NA

	WOLZAGE !	ONOP:	Maimen Control				
		Section in Intern	al Perisson		States in Lutern	al Position	
-	Ma His	CLEGATE	DATA	34.10	CDECHT	DATA	
		1701C - 1701D	0,293		17014 - F701D	0,059	
		F776P - 1708L	0.148		77014 - 17051.	0,115	
-	S C	17057 - 1705K	C.117		77014 - 7705K	0.133	
		37668 - 376.43	0.128	1.1	J7014 - J7051	C 156	
	3	17068 - 1705C	6.157		17014 - 17050	0.805	
		77068 - F7034	0.056		17024 · 17034	0.544	
	0	J7060 - J7030	0.105	1 6	J7028 - J7030	0.092	
-	<u> </u>	J7061 - J7038	6.088		F1021 - F1378	0,022	
		170% - 17030	€.098		1702C - 17030	6.088	
-	,	1706e - 1703K	0.061		1702C - 7707K	0.030	
		17060 - 17031	0.068		77024 - 17W3L	0.671	
· · ·		J706E - J703K	0.110		J7024 - J703H	0.079	
	1	7764 - 77037	0.1615	7	17028 - 1703P	0.090	
		J704g - J7038	8,120		1702C - 1703R	C.694	
_	- 0	J706J - J7044	0.110		77024 - 5704A	0.080	
	1	Dosa - Dosc	0.076		DOSE - DOTC	1,056	
_	9	77060 - 77041	0.070		17020 - 1704 I	0.052	
		17067 - 17048	0.140		FROZA " FROAM	0.083	-
1	8	J706x - J704x	0.090		77028 - 17048	0.062	
7		17066 - 17049	0.077	•	77028 - 77049	0.035	-
, , ;)		,		Personal Control of the Party o	

4.1	TEST COMMITTONS	AND PROCEDURES!	(Continued)

eral Test Results:

Specimen 3/8 18 United Control Corp.

Paragraph	Specification Requirement	Nenarks
4.2.1.1 C)	Cold test & IMM Hg. test	CEC Recording 1st Tun @ 19.5V E to I. 2nd 10 @ 29.5V I to E. 3nd 11 @ 29.5V E to I.
1.4	Operating Time: Start	

- 1. Leached 1.3MM Hy. in 10 min. 13 min
- 2. During Hypot test J 706 E showed wreakdown from 1250 VAC and up. Switch was
- in External position.

 3. Hypot test was performed @ -300F and appx. 30" Hg.

MPRE 74223	6		
mai 87			

Pers.	4.1.	$\mathcal{I}_{(1,1)}$	IMM My.	121	Dest	92		11	7 -	<u> 5</u> y	
700	pero. L	موريانا	elmen 8/11		Rag	incer:		- Andrew	1	Sy Meb	14
a 1m	4400400	out of to		to a dont.		C Imapi		~~ ^ //	A.	Mary and a	
		ycla operu			(CA)	. wehi			<u> </u>	-	
		ara tala		Colegones	4	SL AC		42 <i>(r</i> /4)4	12		. !
1	altero	stop	(seconis) (accomina)		to Exi					
			1.8				and the second				
]_	10		1.84	laca		***		To the same of the	<u>}</u>		
_	XI		11.23	J. Lat	1			de series	_		
) _	- W.F		166	LDI		-			_		
 -	151				-			-			,
 	251	<u> </u>	1.20	3 max		1					,
	LATTON A										
A.	ll eirse Ce come	ine mean	ACRECONTIN	than 10 mgs	-	Yes	S	י מ	* C		
A:	ll eirse Ce come	ite meen	NORMOUNT DR		link so	eitier	s]	י פ	* C		•
A.	ll eirse Ce come	ite meann Militaria Militaria	Marcattor betory		lah pe	siliar Rriema	.		10 C		•
A.	ll eirse Ce come	ite meann Militaria Militaria	Marcattor betory		Sel Sel	ciliac Externa	5	27 1	10 C		
A.	ll eirse Ce come	ite meann Militaria Militaria	Marcattor betory		lah se	siliac Retama	5	න ¹	* C		
A.	ll eirse Ce come	ite meann Militaria Militaria	Marcattor betory			dile.	5	න ¹	10 C		
A:	ll circu	The spaces	Marcarra Ma Marcarra Marcarra Marcarra Marcarra Marcarra Marcarra Marcarra		eroa I	silie.	5	י בצ	** C		
A. Below	ll eirse Ll seite	Pers I	(FO million	pooreds admiss	eroa I	ellic Extern	5	20 1	* C		
A. Service A. Service	ll circu	Para Line Starte	(20 million	per sets proposed and a line of the sets o	eroa I	dile.	5	20 1	* C		
A. Service A. Service	ll circu	Pers I	(20 million	pooreds admiss	eroa I	ellic Externa	5		* C		
CONCLU-	ll circu	Para L. Par	(PO million	poo sote de la constant de la consta		dilec.	5				
CYCLL Exc Inc	ll circu	The macro	(20 million 3270)	per sets proposed and a line of the sets o		River					
CYCLI Ext In	ll circuit continue to the con	The macro	(PO million	per sets he per se		C.F.					· în
CYCLI Ext In	ll circuit continue to the con	The macro	(20 alliant 220)	per sets he per se		C.F.					
CYCLL Extra Inc. Posti	ll circuit continue to the con	The macro	(20 alliant 220)	per sets he per se		C.F.					
COCCLI Extra Cocclination of the Cocclination	ll circult orite Lecal terms to C.E.C.	The macro	(20 alliant 220)	per sets he per se	inh property of the second sec	C.F.					
A STATE OF THE POST OF THE POS	ll circult orite Lecal terms to C.E.C.	The macro	(20 alliant 220)	per sets he per se	inh property of the second sec	C.F.					
COCCLI Extra Cocclination of the Cocclination	ll circult seite Laconer	The macro	(20 alliant 220)	per sets he per se	inh property of the second sec	C.F.					

FORM NO. 6-705 E

	M.S.	Name of Street, or other		Heriner Coctor	1 Lagrado			
	-	Action in Reserved Amelii is			-	istat le Istar	al Antiles	
-	Malia		·	144	CA SK SE.	CATTY_	D.	- 2
-	<u></u>	27016		1429		7701A - 7701D	6.C76	
			7051	14/2		PICIA - INOSI	Gulli	
	<u> </u>	17061	13331	C. 122		17014 - 1705K	1134	
	<u> </u>	17068	J7093	1.4/9		57014 - F7050	G. 156	
		1.34	4.703	1.155		17 th - 17 th	5.314	
· ·		This	411175	1.156		1704 TON	E.CAC.	
		27063	17038	EIEC	-1-2	17028 - 1707E	1.596	
		-706Y	STATE -	0.069	<u> </u>	77028 - FC37	6.622	
	1	J706a	437030	Cult Com		1,030 - 1,030	6.030	
	} !	i	TON .	1.1/63	<u> </u>	LOSC - LON	6.030	
-		J7760	J7031.	6.676		17024 - 17031	0.073	
		PROSE	d Troop			72024 - 1702H	4.083	
		EVC.	17038			77024 - 1103E	6.672	
•			17038	155		7020 - 1703	1.695	
-	<u>e</u>		437044	5.46		77024 - 77044	v.082	
3	-E	JKG4	1704S	5.670	P	77020 - 177010	0.555	
	3		177043	12		TOTE - DOW _	0.654	
	-	17/04	F70ix	1.1/13		DOST - LOT	S. C. C.	
	5	37063 3706b	77048	1.590	- 8	7003 - 7048	6.667	
- ·	- I	3 1000	170/1	1.5.39		FOR FOR	1.638	
an agen 🕶		-	<u>;</u>	1	•			:
	i - i			• .		' , M . 🗆	a ¥ .	
			TARRETT PA	indicated scatio		· INKA 20 LL	See Actes	
and the second second		. ~	* ·-	•			•	
	<u> </u>		!	•		:	:	
			•	41	1.1 01	July 4	it I has	A.
•			1					
				•		•		
•	†		•					
		-		•	•		•	
				•	!		١	
	1			į	:			
	†		į	•	•	•		新
			$1 \wedge$	• · · · · · · · · · · · · · · · · · · ·	•	•		#
		•	1		•		'	i i
• • •				• ;	•		<u> </u>	
and the second			9		•	,	,	Ä
-					+			
	,		•	i	,		,	福 .

C-17-59

rus 2001 P.T. Mobiley

Bepart 7/2236

CYAT Temps NA TEMPS NA TEMPS NA

The same	3071	CONTROL	10) sele (1)	(Y)	
	Section to Detain	al Periting		Switch to Interes) Feetties
A Maria	GIRCHTY	DATA	34.4	CICH	Dila
	maic - main	2.100		JANIA - JANIB	0.072
	77067 - 7705L	- a.ley		F014 - F059	0.110
	17067 - 1704K	0.138		FOLL - FOSE	0.145
	37066 . 17053	0.122		J7014 - J7751	6163
<u> </u>	17068 - 1705C	5, 154	1	77014 - 1705G	0.3/0
	7706R - 1703A	6.6.8		17024 - 17034	0,051
0	J706c - J7030	01/10		57028 - 57033	0.090
	77061 - 1707F	6.693		17028 - 1703E	0.024
1	776a - 7	clul	- -	7702C - 1703G	0.090
3	TONE - TOUR	c. 046	1	7702C - 7703K	2.032
1	TOS - TKIL	c.okle		77024 - 17031	0.073
	77044 . TON	2.115		1703A - 1733H	6.050
	17064 - 1707F	<u>0,/25</u>		77028 - 77035	0.030
	1706g - 1703R	<u> :126</u>		37020 - 3703A	0.094
. 0	7/04J - 1/04A	9:112	1	77024 - J73044	C.032
	TOGE - TOUC	0.671		17028 - 1704C	C. 05#
8	Toxe - Tox	<u> </u>		37020 - 1704J	0.056
	7704 - 1704L	£.15.		FOOL FOUR	0.086
3	J/061 - J704R	c.972		17029 - 1704R	c.ouc
-	17060 - 17017	4.010		77024 - F7641	0.034

B

CONVAIR

16701: 76.223 148. 89

4.1 TEST COMPLETIONS AND PROCEDURES: (Continued)

Specimen S/N 121. United Control Test Ragri R.T. Mobles
Corp. Specimen USAF Inspi

Paragraph	Specification Requirement	Remarks	
4.2.1.1 d)	Hot test 31400 and 31 14	CEC Recording Ext. to Int. Int. to Ext. Int. to Ext.	
1.4	Operating Time: Start		

Notes:

. FM M. A 02 1

Voltage step (sceends) (seesads) Ist. to Ext. to Its is a see set is a see set see see	43.5	BELY C	out of tele ICLE OPERLY	(C)			I Insp		\mathcal{N}			
IN				1 .	eargner))			A CAC	بعا		
DININGTON STRUCTURE All circuits entisfactory All circuits entisfactory All circuits entisfactory All switches setisfactory Furn 1.1.5 TES see not Internal Frierra External to Internal 230 milliseconds Internal to External 250 milliseconds C.E.C. In ternal 250 milliseconds C.E.C. In ternal 250 milliseconds C.E.C. In ternal 270 milliseconds	}			1 3/2	1 202	1		1				
DELECTRIC STREETING. All circuits catisfactory TES BO DESCRIPTION DESIGNATION: All circuits measured greater than 10 megabus TES BO DESCRIPTION CONTINUES. AND ROSECUTIVITY All switches catisfactory Fure 1.1.5 TES see not internal External External to Internal 230 milliseconds Toternal to External 250 milliseconds C.E.C. In terms of the External C.E.C. In the External C.E.C. I	-	~	4	1 16	3							
PRINCE STRUCTU: All circuits entisfactory		-	7	1/19	9 mx				~			
PRINCIPAL STREET All strengts entisfactory - TES NO DESCRIPTION REPLICATION: All circuits measured greater than 10 megahas - TES NO DESCRIPTION CONTINUES AND ECHACONTINUEY All switches cotinsopetory Form 1,1,5 IES no not Internal External External to Internal 230 milliseconds Internal to External 250 milliseconds C.B.C. In the external 250 milliseconds CC.B.C. In the external 250 milliseconds			4	72	2							
All sirenite satisfactory TES BO TENTIFY OF EMISTINGE. All circuite measured greater than 10 magehos TES BO MINIS CONTRIBE AND RESCRIPTIVE PART 1,1,0 TES gee not Internal External	-		Party Bally and the second	03	2 222	-		-	><			
All strength entisfactory IES 50 SO SERVICE ENGINEERS SO SO SERVICE ENGINEERS SO SO SERVICE ENGINEERS SO SO SO SO SO SO SO	-	**			1	-				-		
External to External 250 milliseconds [Diternal to External 250 milliseconds C.B.C. A term of the first of												
Internal to External 250 milliseconds CELLON TRANSPER TOR: (15 milliseconds maximus) C.B.C. The service of the External C.E.C., to be to the External C.E.C., to the External C.E.C., to be to the External C.E.C., to		svite		ptory	10	تنو بالسوارات]				
Internal to External 250 millipseconds OSITION TRANSPER TORI (IS millipseconds maxima) C.B.C. The service of the External C.E.C. The service of the Extern		. svitei		ptory	10	تنو بالسوارات		3				
External to External 250 milliseconds CEITICM TRANSPER TOR: (15 milliseconds artima) C.B.C. The service of the External C.E.C. The External C.E.		. svitei		ptory	10	تنو بالسوارات						
External to External 250 milliseconds SITION TRANSPER TORS (15 milliseconds artima) C.B.C. In terms of the External C.E.C. In the External Carrow Community than the External Carrow C		. svitei		ptory	10	تنو بالسوارات						
EITICN TRANSPER TIDE: (15 mill) seconds Time) C.B.C. 1		svitei		ptory	10	تنو بالسوارات						
C.E.C. 1	All		Pera L.I.	TES TO million	see meta II	Sm)						,
7/2	A11	Stores real to	Tara L.1.	7138 20 million 230 m	eonds winis	San)						,
2 G O O O O O O O O O O O O O O O O O O	All Extension of the Control of the	SECURAL TRAINING TRAI	Para L.I. Alexandria External External	7 128 20 ad 1110 ac 230 a	eonds winis	Sm.)	C.E.	C.	D vo	18cm		
	All Exte Inte	SECURAL TRAINING TRAI	Para L.I. Rica File Internal External	230 256	eonds winis		C.E.	C.		-		d 1
P//	All Exte	Fral to C. T. C. B	Para L.I. Rica File Internal External	230 256	eonds winis	Size PA2	C.E.	C.C.		-		d 1
	All Extension	Fral to C. T. C. B	Para L.I. Rica File Internal External	230 256	eonds winis	(1.00m) (1.00m) (1.00m)	C.E.	C. C.		-		d 1
	All Extension Columnia Columni	Fral to C. T. C. B	Para L.I. Rica File Internal External	230 256	eonds winis	Circuit 1/2 1/2	C.E.	C. C.		-		d 1
	All Extension of the Control of the	Fral to C. T. C. B	Para L.I. Rica File Internal External	230 256	eonds winis	Circuit PA2 PA	C.E.	C. C.		-		d 1
71 3,7	All Extension of the Control of the	Fral to C. T. C. B	Para L.I. Rica File Internal External	230 256	eonds winis	Circuit PA2 PA	C.E.	C. C.		-	_2	d L

HORSE NO SETSEET

the state of the s

3	TWEE THE	JC081		Marina	Combs : 1	Feltage (30 T.)					2.2
			Bet Sco	2 Position	The same of			In Inter	al Parities			
						Si IX.		CULT	DATA	3		
		27710	17010		240		POLA .		0.05	9		
		1706P	F7051	0.	19	В	Pigla -		0.130			
	C	J/061	J705K	0.1	42	C	1701A -		0.15			3
		17066	77057		155	D		17067	0.190			<u> </u>
	3	7	77098		198	X		FROS	0.22	9		8
	7		17011		115			7707	0.07			P
	0		17030	0.1	30	Q	77023.5	10.00	0.108	2		O
		1	17077		23	1	77027		16.02			E
	I	J706a -	J703G		25	I	7702C «	10.000	0.10	7		I
			J703K	6.6	90	3	I .	· 7038	0.140	7		J
'	K	J7060	J703L		35	K	}	7703L	0.08			K
	L		1703M		45	L		PAURY	r.100	_ 11 7		
	X		J703P		45	¥	F	P703P	0.116			×
	1		170 R		50		1	17078	0.114			H
•	0	1	JOLA		37	0	7021 -		0.167	7		- 0
	P	J706d .	3704C		28		17028 -		0.06	7		7
	0	J7068	J704J		74	}		J704J	0.07	9		G.
	-		J7043		0	R		17041	0.10	2		R
	2	J706X	J7048		0			J704B	4- 	2		3
	•	17C5b	J7041		20		7702C		0.03	7	-	-
		3.000	1,000	Se en en	-	 	N. I. YER					
*		COMPTHA	TT CHICK	Ĺ	•	!				ļ		
		;	circuite	(, da _{se}	<u> </u>	7 no 🗌	See Notes			
			2.7 This has	THEY DE MAN	ODD PTTM		,. X T EK	المساد 🗪 الا	360 -0 A60		t i	
- •	1		4.2.1	1 1	fot To	to - 1	1100		•			
 -	-	•	7, 2 . !	/ 7	16/ /6	\$3°/ -	.160		•			
		-	31	" Hg.	1	•						•
• •	·- ·	-	7	719.	1	· !		i i	. }		,	3
• •		İ			1	1	<u>†</u>	ļ	1			3
		1			1	:				j		1
	-	†				1		i	i			4
				-	•	1	•	1		,	!	
					ţ	•	;	!	:			4
		1				i	·	.	•	•	!	
	į		†	; ;		•	•	1				
)	·	1	1		:		!				;	
			1		4				t	,		
-	4.		111			•	•	•	•		-	i
		1			•		i	•	×	į	ļ i	
	,						i	1	j .			1
	<u> </u>	1	لاء شددال		1	L	L		La marine de la la la la la la la la la la la la la		i .	, 1

Date : 6-18-59

P. T. Mobley

Papers 7A2236

CVAC Imap: NA

BAF Imp: NA

	STD OF	MOP!	Minimum Courtral V	elter (2)	5 v.)		
		Indicate the Design	cal Pecition		Sulten in Interes	l Preitica	
	- Malla		DATE	SHIPE	CDOME	DASSA	
		1301C - 1701D	0.029		17014 - 1701D	9.061	
		7706P - 7705L	0.183		J7014 - J7051	0.128	
	<u> </u>	17061 . 1705K	0.145		77014 . 1705X	0.148	
4		J7068 J705J	0.152		J7014 - J705J	0.212	
	-	J706R - J705C	0.203	1_4	37014 - J7050	0.226	
<u> </u>		7705R77034	0.100	1-1-	77024 · 17034	0.074	
		J7060 - J7030	0.135		J7029 - J7030	0.110	
		17061 - 17C3F	0.125		17023 - 17039	0.026	
-4	1	7706a - 1703G	0.130	<u> </u>	7702C - 7702C	0.108	
	3	17061 - 17031	5.091		1702C - 1703K	0.043	
	<u> </u>	17060 - 1703L	C.155		17024 - 1703L	E. C. 82	
		J706H - J703H	C.1.47		17024 - 1703H	€ 100	
	N	77084 - 1763P	6.150		77023 - 1703P	0.110	
-3	1	J706g - J707R	6.1.31		J702C - J703R	0.116	
-4	- 0	37063 - 3704A	0.135		J7024 - J7044	0.103	
		17064 - 1704C	0.100		1702B - 1704C	0.066	
-	9 4	17068 - 17041	0.096		1702C - 17041	0.080	
-	<u> </u>	17067 - 17048	0.145		17024 - 1704H	0.105	
	S	J7061 - J704R	0.122		J7023 - J7048	0.076	
		1706b - 17047	0.102	Ř	77028 - 7704T	0.039	

B

PAR 92

4.1 TEST COMDITIONS AND FROCEDURES: (Continued)

Specimen S/B 121.

Specimen S/B 121.

United Sentrel Corp. Specimen: WA Inap: WA

Paragraph	Specification Requirement	Remarks
4.2.1.1 d)	Hot Test 160°F @ 1.7 mm Hg.	CEC Recordings Pun#1 Ext. to Int. Int. to Ext.
1.4	Operating Time: Start 94.5 hrs. Stop 94.7 hrs. Assembly Cycles 10 Start hrs. Stop hrs.	

** A. J702 A , Scitch Ext. - breakdown @ 175 VEMS

* B. J702 A , Scitch Int. - breakdown @ 175 VEMS

* B. J702 B , Scitch Int - breakdown @ 175 VEMS

* Some intermittent breakdown @ 1375 VEMS

Some intermittent breakdown @ 1375 VEMS

* d. J702 A , to case on dialectric strength test

measured or se un.

Note: C. J701 A to case 4.5 ui

Neto; f. J701 C to case 2.5 ui

PART 742036

• Ind	licates	out of	telor	900E	<u>(2)</u> 1 Cont	rol C	sta: ————————————————————————————————————	A	7- 3 T. M.	Spley
	estrol			7	toler	2000	ne of par		70	,
1	ltege	ste		(seconds) (2004)		in the little			
				1.26			\$ (
	287	1		1.24	int					
	301			0.79	2 100					
		1		0.69	200		>			
	12			0.82	1.11			A STATE OF THE PERSONS		
L	257	1		0.91	g mes					
<u> </u>			an to	lat Stop Lory	•	Arthe	reisire.		av ĝ	
Ext Int		o Inter o Exter	mal		dlliseco dlliseco	onde	,			. /
	C.8.C			7 63 B		The same	C.E.	c.	e Br	to be
Cirreit.	Chen.	84			1	Circui	1 then	مينيا يعلا		- 1000
Pl		14	18	3.2	į	7/2			2,8	3.2
_P32			4		ł	122	0		-	1
270	<u> </u>	-			1	134			-	-
P16		_	 	-	1	P44			-	-
. i.i.	1				1	F28	3			1
20					1	238	+	1 4	.B	32
P26	X	32	8	3.2	7					1

1	Section 1	D	Maginum Control Position			erral Position	
Bi. IS.	ctrc			SH. KK.	CIRCUIT	DASA	
I I	2701G	37025	0.069	1	7701A - 17701D	0.061	
1		1705).	0.176	B	7701A - 1705L	0.133	
 			0.141	C	7701A - 1705K	0.145	
-	J706/1	1705K	0.146	D		6.265	
1-	17046		0 A 9 7	R		0.235	
1-	J7062 -	77058	0.118	1-2	17084 - 77094		
	1706	17033		1	1702 T7033	0.67	*******
8	I	J72030	0.132	1-8-	17020 - 17020	10.02	-
	J706Y	37037	0.118	 	J7029 J7039	JE 25	
	J706a -	J7030	0.130	 	1702C - 1703C	0.112	
<u> </u>	1	J703K	0.083	 	17020 - 1703K	0.043	
	J7060 -	J703L	0.176	-	17024 · 1703L	0.081	-
<u></u>	7	J70304	0.147	1-4-	77024 - 7703X	€ 103	
	JOEN .	1703P	0.150	<u> </u>	77028 - 17038	0.113	
	J706g	17038	0.135	<u> </u>	77020 - 17038	6 120	F 2000
<u></u>	J706J -	J7044	0.133	10	77024 - 17044	0.103	
-	3706a -	37occ	0.100	₩	17028 - 1704C	0.065	
8	J706R	J704J	0.094		1772C - 170W	0.08/	
	J7067 -	FROM	0.142	18	77004 - 1704E	0.106	
8	J 106X .	370UR	0.122	8	17028 - 17048	0.075	
2	37/066	37047	0.102		TTORE - STOLE	0,001	
					-		,
	CONTINU	THY CHICK	2			owed .	
	111	eirenite	indicated continu	ety	. Yes X No L	See Motor	
Ĭ			,				
İ		14.2.1	.1 Hot	test	160°F		
		I .	Į į	U			1
			1.7 mm 4	D .		· · · · · · · · · · · · · · · · · · ·	
				1			•
				i .	•		
				1 	· · · · · · · · · · · · · · · · · · ·	i	
				•	· •	•	
	Í		*	:	1 3		,
				1) i	,	•
1	†			•	•		
1				,	•		:
. •	1				1	1	1
+			<u> </u>	i		•	ŧ
1	†			1	↓		•
ı	i		1	4		t	; 9

art /42236 CVAC Imag: DEAF Igspi___ WOLTAGE DROP. Minimum Control Voltage (25 V.) Switch in Priormal Post tion Switch in Internal CIRCULT NK. DATA Clichit 1701C - 1701D 6099 mon - Long 1706P - 1704L 6179 J7014 - J7051 0.149 17068 + 1705K 77014 - 1705K J7068 . J705J 6.180 J7014 - J705J 17068 - 1705C 0.202 J7014 -J7050 17074 - 17034 0.120 0.074 7024 · 17034 0 3706c a 37030 01136 J7028 - J7030 7706x - 17038 6.120 £2032 0.132 7706a - 17030 114 17020 · TWO 17046 3 1703K C.085 €.6.44 77020 -TO T 17060 - 1703L 0.129 0,671 J7024 - J701L J706# - J703M 0.150 17024 - 1707M 4.100 27064 - 1703P 17028 - 1703P 0.115 3706g -J7039 1.130 17020 - 1703B 0.122 ٥ 17065 - 1704A 0.135 0.105 J7044 17064 - 17CIC 1200 0.666 17022 -DOC 27068 - 17045 0,096 1702C -TOLY 0.082 27067 -JYMA 0.145 1702A ~ TOLE CHOT J7067 - J704R 0.124 17027 -JOAR 0.078 7706b -JOAT. 77C26 -TOAT

CONVAIR ASTRONAUTICS

MP44: 74/2236

PAGE 95

4.1 TEST COMPATIONS AND PROCEDURES: (Comti	med))
--	------	---

Specimen 8/8 121

Crat Sugri Cratial Corp. Specimen: NA Inapi

United Cential Corp. Specimen: NA

Paragraph	Specification Requirement	Remarks
4.2.1.1	+40° F Q 95284 test	SEC Recording Bun#1 Int. to Ext. #2 Ext. to Int. Mag, #
1.4	Operating Time:	

Troca (switch Int.) broke down uppx. 200VAC J 702 A to case - 60 ua J 706 Y to case 13 uz J 706 f to case 12 uz J 702 A to J 706Y 15 ua J 706Y to J 706 f 11 ua

REPORT 7A2236 PAR 96

ASSEMBLY O	YCLE OPERAT	TOM:	121 Central Co Speciment	Engineer: P. CVAC Imp: USAF Insp:	E. J. M.	b
Cantrol		1120	(seconds)	Ima of ass	mbly cycle Ext. to lat	
1.7		1.57] mg	The same of the sa		
LAY	4	1.44	3.002			
304	1	,86	2.30.3			
367		.88	2			
25V		90	2.802			
257	1	101	2 Beck			

DIRLECTRIC ACCEMONA

All circuits satisfactory ----- TES [] #0

THRUTATION PRRISTANCE.

All circuits measured greater than 10 megohns - - - YES

SALESCE CONTRACTOR AND HOSE CONTRACTOR

All switches sucisfentory

rure	4.1.0	172.5	ese note	hriton :	osition External
-					
-				-	

CYCLE SECTEMOR TIMEs (20 milliseconds minimum)

External to Internal 262 milliococate

Internal to External 270 millisegonds

irenit	C.S.C.	to term	7 to 30	Circuit	C.P.C.	In the Re	dr to I
P14.	7	3,2	3.3	P/.2	1	3,2	3.3
P32		À		122	Ç _	_A	A
730				134			
36	Ï			244	1 0		
670				P16	R		
P18	X			128		Y	
ο		Y		P18		3.2	9.3
P26	X	3.2	3.3				

	TOLEAGE	tans:		Merimum Control	: Valteen (30 V.)		/	/	1		QL.
- 1	1	See See	- इस्रोडा	Salar Salar				a cha			-	
	31. 15.	che			-	CYRC					-	
-	A The	77010	17010	0.066	Ma Kka		P7010	D	200		-	— A
	1		7705L	0.156	1	7	1	7	61		H	
	G	J7068	1705K	0.135	C		27051.	T	30		1	
	-	77046	1705	0.202	n	T	F705K	, 	152		-	X
	2			0.322	E	1	17091		180		-	
	7	1	77048	0.066	1 -		77050					-
	0		77033	0.091	0	F	57073		110		+	G.
	¥	·	37030	0.025	<u> </u>	F	J/038	0,1			-	H.
	Y		57030 57030	0.091		i	57035				-	I
	3		J703X	0.039		T	1703G	0.1			1	
	*		J703L		· ·	1	F7C3E		75			Ľ
				0.063	1	1	F703L		75		-	
	M		1703H 1703P	0.081	H H	77024	J703X	X	24		-	
	¥	والمتنافه		0.097	<u> </u>	1	77032		2.4.			X
			5703R	i.	 	1	F7038		18	-		
	0		J7044	0.003			POLA	0.1	,	-	-	- 0
	0		57040	0.050			1704C	0.0			-	
			J704J	0.065	9	1	J704J		180		-	<u>۽</u>
			27043	0.092	<u> </u>		TOLE	0.1		+		+
			J7OLR		8		J7048	61			-	3
		J706b	37043	0.035	1	77020	77047	0.0	75			_1
				•	!	İ			•	1		
			TY CHECK	i				- 🔻	į			
		A31 .	tir e nite !	legicated continu		. Yes	, No L	Same Hot	05	1		Ó
				1 10000	100	011	•	1	·			
		4	Q. I. i ej	+400F@	4570	K.H.		·		- 1		•
~) # 1		•	•			
			Í	,	and the second s	!	•	ŧ i		4		
· · · · · · · · · · · · · · · · · · ·			}		•	} •		•				1
			ļ	· · · · · · · · · · · · · · · · · · ·	<u>:</u>	1	•			1		3
			•			•		l	i			7
ļ	i		1				! !	·	-	1	i	- {
<u> </u>			1	•		,			١			1
				ļ	1	•				7		
					:	,		;		- 4	:	
1				<u> </u>		•	! !			i		
}			4	į.	:		 	i :		ä		
			14	į		i			, •	-		
		ļ		I ∮		;			. :			
								!			;)
	l			.								

Date: 6-19-39 pert 712236 CVAC Insp: Ministen Control Valter (25 V.) YOUTHOW DROP: Seiteb La Brian Post tien Switch in Internal Prottice CIRCUIT CIRCUIT 0.029 1701C - 1701D 0.066 17014 - 1701A 0.142 0.162 7705P - 1705L FEO14 - FROST. 0437 136 17067 - 1705K FROM -POSE 0.146 37060 - 37753 J7014 - J705J 0.180 1706R - 1705C 807 77014 - 1 77050 J705R - J703A 0.072 0.069 FICEL - FEBA J7060 - J J703D 0 0111 091 J7028 - J7030 B J706E - J703F 0.111 17028 - 1703F 026 77064 - 77030 0.110 F702C 17030 0.040 J J7064 - J703K 0.072 J702C -J703K J7060 - J7031 0.074 0.065 77024 - 1703L J706H - J703H 0.122 J7024 - J703H 0.124 3706H - 3703P 0.092 Ħ J7028 - J703P J706g - J7032 ¥ 0.120 0,100 J702C - J702R 0 37063 - 1701A 2.120 0,092 77024 - 1704a 0.083 17064 - 1704C 0,052 17028 - 1704C 0,078 0.066 17068 - 170VJ 17020 - 1704 1 0,122 0.094 1706F - 1704H J7024 - J704H 3 J706X 4 J704R 0.113 J7028 - J704R 0.070 0.088 17026 - J704T 0.036

13

CONVAIR ASTRONAUTICS

MEPORT 782236

4.1	1537	CONDITIONS	AND	PROCEDURES:	(Continued)
7.4		AABENTA ABE	AJY.	TANA SANA ASAT	/ COM ATRICAL

Specimen S/N 121. United Control
Corp. - pecimen

Date: 6-19-37
Test Engr: 77-Mobley
CVAC Insp: NA
USAF Insp: NA

Paragraph	Specification Requirement	Remarks
4.2.1.1 +)	Post Enu. & Ambien Ucna. Proct 3/3/3	;
		·
1.4	Operating Time: . 4 Ar. Start 95.5 hrs.	•
	Stop	

word 1. During Hypot test (sith Ext.) had which I solver on I 100 E

* 2. Distriction strongth tout (Ext.) - The E

* of as.

3. SEC Yword #1. Int. to Ext.; #2. Ext. to Int.

CHANG A 102

REPORT	712236
7105	99

ntrol	Fara 4.1.8	Time (seconds)	(seconds)	Type of ass Int. to Ext	
187		1.46] yez		
107	4	1.40	1 202		
307		5.73	2 mx		
30Y_	1	1. 15.3	2.00		
257		2,79	2 max		
25 V	1	5.46	2 max		
ll circ	STRENGTH: uits satisfac REGISTANCE:	•	han 10 maga	ne Te	10 NO

CTCLF SECHENCE TIME: (20 milliseconds minimum)

External to Internal Admilliseconds

Internal to External 25 milliseconds

POSIT	ion trans	ER TYPE:	(15 =111	iseconds :	maximum)			
Y	C.S.C.	THE PARTY	x to h			C.F.C.	In to Ex	By to In
P14	<u>, , , , , , , , , , , , , , , , , , , </u>	3.3	3,00		P/.2	N	ر. ۶۰	3,2
P32	a	1		i	P22	0		Λ
P30	H H			l .	P34	P		
P36	I				P/./	1 9		<u> </u>
P/0_					_ P16	R		
P18	K		l		P28	5	l V	Y
P20.		V	<u> </u>		F38	I I	3, 3	-3.00
P26	X	د ، تقد	. ૐ, ત્ર					

1 NA 2 18

~~

POLIASE	PAOP:		Mariasa	Control !	Foltaro (30 V.)					Y.
	and and	h Bridge	Printer			1	h l	n Intere	al Pasition		
Malla	etter	7	DA:		SH. XI.	I	AC		· DATA		
	77018 -	J7010	0.0			FROM	-	17010	0.0=9		
	7706P	17051	0.1		В	7701A		1705L	0./33		
G	J7067	JAUSE	0:1	•	C	1701A	. T		0.138	T	
D	J7046	J705J		46	D	1		1705/7	0.226		
1	1706B	17058	01/	75	l.	T		F305C	0.263		
		17034	008	2	7		1	F20.20	0.080		
Q .	T006	/2030	0, 1	to	Q.	17028		77028	0.095		
	7	J707F	0.1		H	77073	- 1	F2028	0.110		
1	J706a -	J703G	0.12		I		- 1	77036	0.096		
1	3706g -	J703K		7.5	J	J702C	$-\tau$	1703K	0.044		
K	37060 -	J703L		94	K	7702A		7031	0.076		
1	1706н -	1703N	c. J	1	L	PIOZA		7707M	0,890		
N	J7064	J703P	01	40	N.	F	- 1-	7035	0.075		
	J706#	1703R	Oil	20	N	7702C		770 3R	0.195		
0	J706J .	J704A	0.1		0	1702A		77044	0.110		
7	3706a .	J7040	0,0		P	T		7704C	0.056		
0	J706R .	J704J	0,0		Q			7043	0,070		
1	J706F -	J704.H	01/		R		$^{-}\mathrm{T}$	70AN	0.115		
8	J706X -	J704R	211	,	3	T		1704R	0,063		
7	3706b .	2704T	0,0		7	1702C -		TOAT	0.034	ž.	
	T									1	
	CONTIN	TY CHECK	•		<u> </u>	' _		general major	1		
,		sirènita	Indicated	continui	v	. You	XI.	No	See Notes		;
ļ					,	1	. !	, ,	1 1 .	.] [;
	•	4.2	1.1 f.	Fes	+ E	DIROI	Mh.	rental	Ambie	ut !	1
		1			4			• ,		:	,
			Eud.	Proo	t 64	cle	•		į	1	
				•		;		;			
	•			•	•	t t	•	•		1	!
Ì					1 2	•	i		,		1
				1 ↓	, 		1		*		
	1						1			1	

Date: 6-19-59
Test Engri R.T. Mishley

Pege 100

Report 7A2236

CVAC Insp: NA

BAF Insp: NA

	MULTANE I	ROP:	Minimum Control	Velgage (2)	5 V.)		
		Series de Extens	al Position		Stitch in Interna	l Position	
	NA NKA	CIRCUIT	DATA	SMARK	CIRCUIT	DATA	
		7701C - 7701D	6.105		J7014 - J701D	0.069	
	В	J706P - J705L	0.162		F7014 - F7051	0.131	
	G	17067 - 1705K	0.136		77014 - F705K	9.147	
	D	37068 - 37053	0.153		J7014 - J705J	0.218	
	3	J706R - J705C	0.180		J7014 - J7050	0. 259	
	7	77068 - J703A	0.094	11	J77724 - J7703A	0.084	
	a	J706c - J703D	0.135		J7023 - J703D	0,077	
*	H	J7061 - J703F	0,120		F7028 - F703F	0,032	
	1	J706a - J7030	0,/20		17020 - 17030	0.098	
	J	17068 - 1703K	0,028		1702C - 1703K	0,045	
	K '	17060 - 1703L	0,110		17024 - 1703L	6.079	
		J7068 - J703M	0.140	1	17024 - 1703H	0,492	
	A	J706H - 1703P	6,140		770287703P	0.097	
	R	J706g - J703R	0.130		J702C - J703R	0,110	
	- 0	J706J - J704A	0.130	•	J7024 - J7044	0,115	
	2	1706a - 1704C	0.092		1702B - 1704C	0.056	
1	Q	17068 - 17041	0,088		1702C - 170/J	0.072	
	R	1706F - 1704F	01140		.770770AN	0,120	
	S	J706X = J704R	0.115		1702B - 1704B	0,065	
		1706b - 17047	0,094	•	77020 - 27017	0,034	

CONVAIR ASTRONAUTICS

PERSON 742236

4.1	TEST COMDITIONS	AND PROCEDURES:	(Continued)
-----	-----------------	-----------------	-------------

Specimen S/N /2/.

Specimen S/N /2/.

CVAC Inap:

CVAC Inap:

CVAC Inap:

CVAC Inap:

CVAC Inap:

CVAC Inap:

Faragraph	Specification Requirement	Remarks	
4.4	Operating Acc., Fost Acc., prod Cycle	Speed # 4 timing A Int. to Ext. to Int, Speed # 2, timing B Loads off	
4	Operating Time: Start	Loads ON Int. to Fxt. to Int. Loads off Mecorder Mag.#	1

* * # j.

MML /02

ontrel	CYCLE OPERATI Para 4.1.8 step	,	tolerend	V 172		ambly avel Ext. to D	
107		1.48	PAT				
184		1,37	1 202				
30Y		0.89	2 2				_
30Y	1	0.70	2.22				4
<u> 25y</u>		0-48	_				-
25 V		0,91	2 3 100				_
ll eire LATUON 11 circ	STRENOTH: wite extisfac wite energy-of THUTE: AND MC	i greater MacOkribii Rory	than 10 m	Sopus -	- YES	S 10	
ll eire LATUON 11 circ CH CONT	wite satisfactives wite measured the seasons of the	i greater	than 10 m	wisch n	osition	V -1	
ll eire LATUON 11 circ	wite entisfactivite measured THUTE: AND MC	i greater	than 10 m	wisch n	osition	V -1	
ll eire LATUON 11 circ CH CONT	wite satisfactives wite measured the seasons of the	greater McColeThu Story IBS	than 10 m	wisch n	osition	V -1	
ll eire LATUON 11 circ CH CONT	wite satisfactives wite measured the seasons of the	greater McColeThu Story IBS	than 10 m	wisch n	osition	V -1	
ll eire LATUON 11 circ CH CONT	wite satisfactives wite measured the seasons of the	greater McColeThu Story IBS	than 10 m	wisch n	osition	V -1	
IATUM Il circ CH CONT	wite satisfactives wite measured the satisfaction of the satisfact	McCorribit Story	than 10 m	hrisch Station	osition	V -1	
LATURALLI CIPC	wite satisfactives wite measured the seasons of the	greater McCONTINI Story 188	than 10 m	irital ;	ositios Externe	NO	

P35.

__1110_

PLL

PJH.

P16_ P28

	And sale	Se Briages	Posttien		Sed teb	la Intern	al Poettice	
M. M.	7	TE VE	ī	ICA SM. NE.	CIE	T	DASA	
	77010	J7010	458	i.	7701A -	77010	074	
	J706P	- J705L	120	В	77014 -	J7051	129	
C	J706T	J705K	.163	C	77014 -	3705K	133	
<u>.</u>	17048	17090	1190	D	77014 -	17050	126	
B	J7068	9 77098	216	B	17004 -	DOSC	154	
2	JANG	- 1201A	.020	12	-	77070	159	
0 -	J706e	- DO30	1312	0	7707	17029	160	1
	J706¥	1707	1107		77020	F202F	.030	
1	J706a	37030	130		77020 -	77030	170	
đ	J7065	- J703K	0.74	J	mosc -	1703K	082	
	J706G	-J703L	109		77024 ·	1703L	150	
	1706H	- J20334	1420		77021	J703H	168	
_K	J7064	J703P	145		77021 -	7703P	160	
	1706g	-J7038	132		77020 -	17032	17/2	
0	J706J	-J704A	122	0	77024 ~	77044	1193	
2	J706d	- 5704C	098		77028 -	77010	.081	1
0	J706R	-1704,3	1082		7702C -	TYOU .	./39	4
1	37068	4,7704,8	196		17024 -	TOWN	1190	#
8	J706X	-J7048	117		77020 -	FTOLE	092	₩
<u> </u>	J706b	37043	074		7702C	Min	066	4
			•	i i			•	
•		WIT CACE	44 444 4	l man district	Yes	d	po lotes	
	1 1	dresite in	THE PER SOUR		1982	نـــا 🕶 ر	200 -0 400	•
			1, 4 Pa	A A	in 1/2	ration	, •	
						rus, rup		,
-			PM	of Cy	ale			
			Ĭ į	1 /				
				!	•			
	İ		-	,				
				·			•	

Tost Engri E. T. Moble

Bepert 7A2236

CVAC Inep:

DEAF Insp: WA

Land Samuel	TULIAVB A	JAOP I	MINIME COURTS! V	of redo	5 V.)	_	
		Section de Datem	al Periting		Sed tob in Intermi	Position	
	Ma MKa	ताव्यार	DATA	SHAR	STRONG	DATA	1
		7701C - 1701A	497		17014 - F3010	.OB/ .	
		77062 - 1705L	163		17014 - 1708L	129	
	i	17061 - J705K	149		7701A 77057	180	
		J7068 - J7053	1.54		3701A - 37053	.119	
	3 8	J7068 - J705C	190		7701A - 1705G	159	
	,	F1068 - 17034	.084		17024 - 17034	160	
	0	J7060 - J7030	132		J7028 - J7030	162	
	H	J7067 - J7037	110		J7028 - J7039	030	
	I	7706a - 1703G	1/30		FROSC * FROSO	172	
	3	J7061 - J703K	.079		1702C - 1703K	082	
	1	J7060 - J703L	.105	8	77024 - 1703L	156	F
	1	J7068 - J703M	.147	i	77024 - 7703H	172	
1	M	J706H - J703P	145		77028 - 3703P	160	
	1	J706g - J703R	/33	1	1702C - 1703R M	180	
	- 0	J706J - J704A	124		7702A - 1704A	. 195	
		17064 - PUC	.094		77028 - FYOLC	,032	
		17068 - 17071	.095		17071 - 2007	140	
1	R	J7067 - J704H	132		TYOOL - TYOUR	1193	
	3	J7063 - J704R	127		17028 - 170AR	.092	
	1	J706b - J70/3	100		1702E - 17013	.067	
	Y					The second second	

4.1 TEST CONDITIONS AND PROCEDURES: (Continued)

Specimen S/N (21. UNITED CONTROL CVAC Inspi NA

(ORP SPECIMEN USAF INSP: USAF INSP: USAF INSP: USAF

Paragraph	Specification Requirement	Reserks
4.3	OPERATING VIBRATION 5 to 125 CPS. "X" AXIS	RECORDER MAG. No. 159 SPEED #2, (16"/BEZ) RECORD NO. TIMING - 8" (253
1,4	Operating Time: Start 97.5 hrs. Stop 27.7 hrs. Assembly Cycles 2	18 CHANNEL CE.C. RECEBULG RECOLIANCES: #1 - DRIVE 2 - "X" AXIS 3 - "Y" AXIS 4 - "E" AXIS 5 - APPREL AXIS 68233

Notes

4.1 TEST CUNDITIONS AND PROCEDURES: (Continued)

Conoral Test hosults: Maryinal (Retsit)	Juston 6-30-57
Specimen 3/8 121. United Control corp.	Test Engr: C. T. Mobiley CVAC Insp: NA UGAP Ins;: NA

Faragraph	Specification Requirement	Remarks
4.3	OPER.ATING	Recorder Mag. # 137 Speed #2(16"/sec)
	VIBRATION	speed #2 (16"/sec)
	5-125 0/5	timing 8
	"Y" Axis (re-run)	18 channel CEC recording resonances
		#1 Drive
		#2 X" Axis Mag. #
1.4	Operating Times	#2 X AXIS Mag. # #3 Y AXIS 25073 #4 Z AXIS
	Stert 97.0 hrs. Stop 97.2 are.	#5 Pipper Pips every cycle 5-20
	Assumbly Cycles	every 5 20-100 110 120 , 125
	Start hrs. Stop nrs.	double pips @ 20,125,5

2. There were no large resonances during this supported only one of note was an'y " six is

-4 4. A J2!

THEE 196

General 7	[est	Result	. Marxinal	(Ketcst)	Date	<u> </u>	- 30 -	59		
Sport no n	3/11	121.	Maryinal United Specim	Control	Test CVAC USAP	Engri	RTM	A TA	J. Cove	72 14 M
	حسبا		Pecin			- 1.20 %				*

	et der digt managementettigenigheit der serbitimen ums, den den den settengaget verbrieb mentagere. Aus in de geber	The second secon
Paragraph	Specification Requirement	Remarks
4.3	Operating Vib. 5-125 CPS	RECORDER MAG. No. 159 SPEED #2, (16"/SEC.) TIMING B
	* AXIS (REKUN)	18 CHANNEL C.E.C. RETORDING RESOLIANCES; #1 = DRIVE Z - "X" AXIS MAG NO. 3 - "Y" AXIS 26073 4 - "Z" AXIS
1.4	Operating Tize: Start 97.2hrs. Stop 97.5 hrs. Assembly Cycles 2 Start hrs. Stop nrs.	PIPS EVERY CYCLE FROM 5-20 " 5 CYCLES FROM 20-100 "0,120,125 DUBLE PAPS OF 5,20,125 See 1501 1 BELOW!

HUTCH I. IT APPEARS THAT THE 18 CHANCEL C.E.C. RAPPER ON THE ACCELEROMETER OUTPUTS WAS FUNCTIONING ABNOCATOLLY DURING THIS VIBRATION SWEEP. IN LRDER TO NEEVENT OVERTESTING IN THE AXIS IT WAS DECIDED TO BUN THE "X" AXIS KESONAUT SEARCH BEFORE REPUNING THE "E" AXIS

2. The acceller exacter sutput recording was N.G. so it was destroyed

Specimen 5/	A ROBULTO Maryinal (12th Re 18 121. UNITED CONTROL RP. SORCIMEN!	Test Engr: E.T. Massar/T.Courses CVAC Insp: NA USAF Insp: NA
Paragraph	Specification Requirement	Remarks
4.3	OPERATING VIBRATION 5-125 C.P.S.	Spen #2 (16" be) RESEARCH 02
1.4	DERUN OF ZAXIS (SEE NOTE 1 BELOW). Operating Time:	18 CHANNEZ CEC. REDEDUG RESONAULES: #/- DRIVE 2-"X AXIS MAG. NO 3. "Y" AXIS 199CK. 2/ 4. "Z" AXIS REDED NO. 5. PAPER
	Start 97.66 hrs. Stop 97.85 hrs. Assembly Cycles 2 Start hrs. Stop hrs.	PIDS EVERY CYCLE FROM 5 to 20 5 CYCLES . ZO TO 10 110, 120. \$ 125. DOUBLE PIPS AT 5, 20, 125

NOTICE 1 THIS VIBRATION SWEETS IS A REPEAT OF THE ONE CONSULTED FROM 97.2 TO 97.5 HOURS OPERATING THE EARLIER THIS EVENING

Oeneral Tes Specimen S/	1 121. United Control Corp. Specimen	Test Engr: P.T. Mobiley CVAC Insp: USAF Insp: NA		
Paragraph	Specification Requirement	Remarks		
4.5	Lite Test			
1.4	Operating Time: Start			

put on specimen in testing prior to beginning the Lite Test -

زر ۾ جات

MINTE	7	T	Megieres Control	OT CE TO				10
·	January	Y	l Positija	<u> </u>	· · · · · · · · · · · · · · · · · · ·	7	cal Position	#
Halle	COC			St. KI.	·	TITE .	M24	#
<u> </u>	77010		0.0634.050		1701A -	7	0024	+
	Y	17051	0.005	4	T	17051	0.012	+
	17061	J705K	0.013	4	T	1705K	0.028	#
_1	17065	17051	0.009	1	TTOLA -	17050	0.024	┿ ╌┼-
		17031	0.00%		17024 -	J703C	0.007	+
	7700	4.77037	2032		1702	J770.73	1 0025	+
Q	3706	17030	0.031	<u> </u>	17028 -	77078	0.115	
	1	17027	0.031		F	J7078	0-145 00/3	┿┼
<u> I</u>	J706a	J 7030	2. 028	I		77036	0.137	*
<u></u>	-	J7035	0.030			1703K	0.05	+
	J706G .	1703L	0. 225	_	17024	17031	0038	-
		1203M	0.030		77024	7703M	0.025	-
<u> </u>	1100A	J703F	0.832	-		7703F	0.1.15	+
<u> </u>		J707.	0.430		1	J7038	0.028	+
<u>Q</u>		J704A	0.439	9	77024 -	JYY	0.025	
<u>.</u>		3704C	0.027	-	77028 -	J704G	0.084	
9	J706R	57045	0.031	9	7702C -	J704J	0027	-
1	J706F	1704H	0.025	4	J7024 -	1704N	0.027	-
8	J706X	1704	0.027	4	17029 -	J704R	0.082	
_1	3706b	J7041	0,028	1	1702C =	TOLE	0.090	1
3	A11	eirente Life	indicated continui		Y Con	no [See Notes Switch L	INIT.
·		1	Specimen	,				1 50
		1 !						
		Made	at \$54	Cycl	25	•		
				· 4		i.		
			• •		•		•	}
			,	1		!	t	
•			1	•	•	t		i è
		† ;	•	•		•		
	• •		i i	• į		:	•	
	•	!	•)	· •	į	3	
					t.	i	•	Ì
								7
			,				•	
			•		•			

ľ		D	ate:		•	Page	09	W. W.
		T	est Engri			Report 7	12236	e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de Antonio de la companya de la c
		C	VAC Insp:			USAF Ines)	
1	POLTAGE I	MOP:	Minimum Com	trol Voltage	(25 V.)			
		Switch in	External Profition		Section !	a loteros	1 Posttice	
	Ma KKa	CIRCULT	DATA	SN	a co	UL2	DASA	
		J7013 - T2	oro			TOLD		
		F706P - 17	051		- 1701A -	17051		
	<u> </u>	1700 2 17			J7014 -			
			053		J701A -	[
	3		05C		77014 -	J7050		
		Y	034		1702A -	J7034		
			03D		\$702B -	J703D	0.030	
3	H		0.37		17021 -	17037	0.029	
	I		030	- 1	Troac .	J7070	0.028	
	- J	Y	03K			J703K	0.026	
+	K L	Y	031		J7024 -	1703L	0.0.18	
	N N	Y	03M 03P		J702A -	1703H	0.028	
	Y Y		0 3 R		J702C -	J703R	4144	
+	0		044	1 1	\$702A **	JZOLA		
1	P		CAC :	1	17023	7704C	0.018	
-	Q	Y	063		17020 -	1704.1		
-	R		OVB .		J7024 -	TOLK		
	S		O4R		77028 -	17048	0.025	
-	7		047	2	- · · · I	J7043	0.027	
			•				, ,	
1								
			•			: !		
) lat	INTERNAL	POSITION .						
" F			,		•	1		
97	500 ()	iches		. I	i	1		4.7
	/				į			
					•	:		
1		•				: !	:	
1		,			;	<u>'</u>		
ş •					•	,	· .	***
ķ	•	•	•	• .		A		المنظم المنظم المنظم المنظم المنظم المنظم المنظم المنظم المنظم المنظم المنظم المنظم المنظم المنظم المنظم المنظ المنظم المنظم
Ĺ						7		
,				;		4	O	
į.				, ;			15	•
f				. !		,	F	. 1
1								
Ì							: •	· al
بل	,		4	1 1.	:	1	1 1	· ACAM

182236 NOT //U

For Para. 4,5

Timited Control Corp.

Specimes 5N 121

Detai July 10, 1959

Toot Impi R. T. Mobley

CVAC Impi NA

UBAT Impi NA

4P @ and of Life Test

SATTCE	CKT.	DATA Internal	SHITCH	CET.	External
A	P2-P1	0.059	Δ	12-73	0.096
В	P6-P1	0.109	79	P6-P5	0.162
С	P12-P1	0.104	С	n2-n1	0.160
đ	P10-P1	0.105	D	710-79	0.142
E	P8-P1	0,122	1	P6-P7	0.178
P	P14-P13	0.031	7	P14-P15	0.114
Q	P32-P25	0.096	0	P32-P33	0.120
н	P30-P25	0.031	Ħ	P30-P31	0.114
I	7%-737	0.105	I	P36P39	0.120
J	PLO-937	0,040	5	P40-P43	0.077
X	P18-P13	0.080	K	P18-P19	0.128
Ĺ	P20-P13	0.090	L	P20-P21	0.136
M	P26-P25	0.100	М	P26-P27	0.136
	P42-P37	0.110	Ħ	P42- P 45	0.129
0	122-113	0.112	0	P23-P23	0.127
P	P34-P25	0.654	P	P34-P35	0.134
Q	P44-P37	0.674	Q	NL-N7	0,086
R	P16-P13	0.110	3	P16-P17	0.137
8	P26-P25	0.063	8	P28-P29	0.112
T	P38-P37	1.832	•	P38-P41	6.64.2

4.1	TEST CUMULTIONS	AND PROCEDURES	(Continued)
-----	-----------------	----------------	-------------

General Test Results: Failed	Date: Value 14 1957
Specimen S/H 124 United Conto/ Corp. Specimen	Test Engr: R. T. Mobles CVAC Insp: NA USAF Insp: NA

Faragraph Specification Requirement "americal formula for the Hypot breakdown was determined to be caused by the Ulndon using the improper relays for the AC switch."

1.4 Operating Time:

Stort 10 3 hrs. Stop 1028 hrs.

Assombly Cycles

Start hre.

Lestage of breakdown accurred between I 706 F.

I 7060; I 706 H, I 706 5; intermittent
between & & and between a & b and
between & & ind & & &

between for ind & & &

x 2. D.3 s. intermitted to the contaminated
and hanging up in the open position.

Exercising the plunger a tow times freed
the saidth and ellowed the Described to the

The saidth and ellowed the Described to tree;

CONVAIR ASTRONAUTICS

MAR //2

1838 e	Ach	8,0	- *-	124 trol Corp.	Date:	July 14	59
For p	mra, 4	ELLET Speci	3/1 4	dist.	Engineer:	ELLIM	extery;
e	1444-	CAN not be been	ITEM CON	corp.	CVAC Imep		
					USAP Imap:		
ASS		ICLE OPERAT	35	tolerance	1		• •
1	tues	rtep		(seconds)		mbly cycle	
-	100		1933		The STA	Bot to Int	!
-	7.57	4	1.514	3			
X	3CN	reserved from the second	hape in the Town	2 max	1		. #
^	3/05/	1	·	2 77		-	;
	257	S. S. S. S. S. S. S. S. S. S. S. S. S. S		2 1002	Andreas - Andreas - Andreas - Andreas - Andreas - Andreas - Andreas - Andreas - Andreas - Andreas - Andreas - Andreas - Andreas -		:
	257	A ANNUAL PROPERTY AND ADDRESS OF THE PARTY AND		a max			
-		ANT PROPERTY NAMED IN	Constructives transmissible particular	And the state of t	· Control of the second second second	4.~~ ~~~~~~	
Al	l circa	its massured lits massured Militar AMD Br hos satisfas Para 1.1.	Lacory tory	Faites		there si	
	•	etan	YES .		mal laters	3	,
							:
							ļ
			14	*		4	ŀ
							, 1
CICLE	SECTION.	ŒŒŒ (:	o willines	onda minimum	1)		,
\$ urd	amal t	a Intermul		114			-
Ext	emal t	o Internal	wi	llisecomie			
		o Internal	•	-			
Int	ernal t		m1	lliseconds			
Int	ernal to	o faternal	 	-	E.F.	.C. en to kr	Ar to to
Int	ernal t	o faternal	 	lliseconds	Tent the	C. En to Ex	ity to In
Int PASIF	ernal to	o faternal		lliseconds	raula (Sen Yaula (Sen Yaula (Sen	C. En to By	its to In
Int	ornal to	o faternal		lliseconds	E.F. Fault Chan PUB K PUB C	C. Ex to Ex	to to
Int [NSI] Ireult P14 P32 P20	ornal to	o faternal		lliseconds	C.F. Faul 4 (5a.5 7/2	C. En to Ex	Az to In
Int PMSII PM PM PM PM	ornal to	o faternal		lliseconds	randa (5mb)	C. En to By	to to In
Int PASII PIA PIC PIO PIO	ornal to	o faternal	(1)5 m111	lliseconds	E.F.	C. En to Ex	he to la
Int PMSII PM PM PM PM	ornal to	o faternal		lliseconds	C.F. Fault 5an P/B N P/D C	C. En to Ex	Az to Da

V~~!

CONVAIR ASTRONAUTE 5

4.1	TEST CONDIT	TONG AN.	PhiChilly St	(Continued)
-----	-------------	----------	--------------	-------------

Specimen 3/8 124. United Control CVAC Inep: H. Edwards
WAF Inep: WAF

Paragraph Specification Requirement homerse

4.1.8 Initial Satisfictory Install Sat. 2014

(6.7)

Uperating Time:

Start 158.6 hrs. Stop 159.4 are.

Assembly Lycias &

Start hrs.

considerably too high. It was determined that the sensing lead on ITOIA was losse. This was repaired but the westage drap was they meas, as 1.3 vec It was noted that pin A in ITOI was badly pitted and that the pay heated up lone on test set pitted) This play will be changed after Vib. and a new set of Erdrap meas, made.

Rec. No. 0849

PARI

114

CONVAIR ASTRONAUTH 5

United Control 4.1.8 Specimen 5/N /24 Fngineer: Initial Sat. CVAC Inspi --WAF Insp: tolerance Control voltage stop (seconds) (seconds) 107 1.449 1:325 0.673 161 0.661 300 0.781 0.914

DIELECTRIC STRENOTH

*11 circuits satisfactory - - - - - TES NO

INSHIATL E RESISTANCE

All circuits measured greater than 10 megohas - - - YES 10

SELECTION OF A SECURITION AND MARKET

All writches setisfactory

-	·.,		
ra li.l.o		BO	Sritch position
sian	YES	eee nose	interi d'Arterna
1			
I			
•			
· ~ ~		The	

CYCLE SEARCH TIME: (20 edilleccords minimum)

External to Internal _____milliseconds

Internal to External 200 millineconds

irmit	C.B.C.	De GOEX	s to B		Clouds	C.F.C.	In to Ex	dr to in
P14		1.0	1		FL2	y	1,3	7.5
P32					Pal		1	
P30	H				P34	P	-	
136					_ P			
In _					P1:	R		
118	X		1		Fait		<u> </u>	
2/1)			I		_ FJd	<u> </u>	1	1.7
F26	X		1.	1		T i	Ť	}

	24 OB	DROP:	·	Maximum Control	Voltage	(30 V.)				TUL
		Lances !	n Briarra	1 Poets: de		Section	in Intern	al Perillen		I
	MX.	CIRCI	T ?	DATA	Sie Hi.	CIB	CUTT	224	1	8.
		1701C -	17010	.048		17014 -	J7010	.194		
		17267	17051	.142	В	77014 -	J7251	./24		
		1776T .	J705K	./62	ic	77014 -	J705K	,107		
len	<u> </u>	1776	J705*	114	10	77014 -	1705	159		
1		1777/2 3	7775C	1/99		Jeson -	שבים	204		
1		17068	la Brita	.110		1202A -	1	./3.2		
0	· .	TAKE .	Jan _	.105	C	77029	J70 XD	.087		
L		: ;i.:Oby .:	TANK .	014	1	7025_"	, ,	.031 ,490		
		J706a -	J7:30	105	!	J7020 -	1	./02		T
	· · · · · · · · · · · · · · · · · · ·	377Kg -	3772X	.082	3	7702C -	1 1	.052	•	
LÃ		J706G	J7031	140		77024 -	, -	.106	T	
1		J206H -	ו אנמינו	135	ــــــــــــــــــــــــــــــــــــــ	- גבמיו	.U703W	.099	I	
		J7068	J 37 34	102		770 ta -	1	.080		
	-		3~~34	-1/3	L.	77020 -	.J723 38	.095	1	T
0			ا المهادي	146	0	J7924 -	- T	.149	1	
P		J706d	370LC	.019	P	J7028 -	1	.078	1	T
ú		3706R	√7 07,3	093		J7030 -	' 1	,078	1	
1		J'/Gc? -	1 X	1/38		7924 -		131	1	
5		J706X -	J7048	148	T s	17028 -	T	.077	I	
		17: 1's	J104.T	93	1	J7020 -		.042	7	-+

CONTINUITY CHECK

4.1.8. Initial Satisfactory tertormance lest

. 3		Date:	Oct.5	Page _//5
4		Test Engri	H. Edwards	Report 7A2236
j		OVAC Laspr_	NA	IGAP I tasp: NA
i	VOLTAGE ERUS	Minis	num Control Voltage	(25 V.)

	WOLTAGE :	CRUSS I		Minimum Control	Voltain 12	5 V.)		
1		SMICE	in bruss	al iceitics		Switch 1	a Intime	L Postuo
	Bri. Ya.	CIN		DATA	_ identia	_ CIRC	П?	
		more -	במנכת !	1064		J7614 -	nem	.824 *
1		י יוצית י	non	132		J7014 -	J705L	128
		17065 -	אננרג	168	<u> </u>	ב ענמה .	J705X	
	1	J7765 -	ָ בַּנְמַתְנ <u>ָּ</u>	177	1.2	3-011 -	37053	.112
1	- 1	J7065 -		.193	8	1 J7014 = 1	J1050	185
	7	Trode -	1703A	1 . 1 . 1	1	J7324 :	J703A_	.099
	0	.7706c -	מניר.	102	5	1702B -	<u> </u>	.087
11	н	1721 -	1 DIL	.095	1 1	.77023 -	1703E	030
1	I	1776a -	. מנמיד	.108	1 1	1000 T		.100
	J	.7736s -	†	979	4	1 ,7033 =		.0.50
	E	.70xc -	5773L	129	1	177724 -		,09 bg.
1		7	אַנַמרנ	122		J-024 -		.09.60.030
-1	X	J7068 -	J. D. P	.098	1	1 ₹0:3 -		.078
	*	J705c -	אָל פריי.	1 1 . 1	1	- נגטנג'	كذرين	.028.092
4	0	ూంట -	1.077	143	0	J7024 -	JOGA	.141
		77064 -	•	098	2	1722B -		.076
			Į.	.090		ت تعدد ا		.077
1	R	:7267 -	1	.134	1	J7024_7		,125
	5	3706X -	J. 7/2	JQ5	3	,mn.:3 -	ī	.9762
	1	37X) -		.092			1	.041
								And the second s

* NOTE: READING FLUCTUATED BETWEEN

0.324 ANDO.824 NOC.

It was determined that this discrepancy was in the test set.

B

A TOWN A START OF

CONVAIR ASTRONAUTE S

4.1 TEST CONDITIONS AND PROCEDURES: (Continued)

General Test Regults:

Specimen 124 United
Control Specimen

Test ingr: ET Mobley
CVAC Insp:
USAF insp: NA

4.3 Operating Vib.

#1 Z axis 2 accell. record #2 Y Axis 3 #3 X Axis 4 #1 drive 1 256/11 2,3 \$4 506/inch

> Hag# 1000k11 Here # 17994 5-80/18 17995 80 - 2000/18

1.4 Operating Time:

Start 159.4 hrs. Stop 160.0 hrs.

Assembly Lyones 6

Start hra.

Minory Channel "A" (2001 ckt.) coas Moded to Made quite à bit d'
15 ise— an assembly cycle à as mude I to E à speciel p

3 48 ips to See color ext. looked like. Buch to 2 at

66 jps.

4 Mide assembly cycle I to E to I a speciel 4 timing A" at
200 jps

3. Assembly cycle at end of mu made at speciel 3

V × 4 23

oltage	step	(seconds)	(seconds)		embly cycle
157		Min	· Par		
157			1 202		111
307	1		2 201	/	7
301	1		2.002		
_25 <u>Y</u>	 		2 sex		
257			2 Mex		

Para L.1.8			Internal Extern		
	YE.5	ose note	Interne	External	
		Y 77			
		10.8		A A A A A A A A A A A A A A A A A A A	

CYCLE SPONUCE TIME: (20 milliseconds minimum)

External to Internal 26Cwillisewords

Zat Smilliseconde Internal to External

End of run (surep) 15 milliseconds maximum C.P.C. In to Ex Ex to in C.E.C. PLL _ .P32 _ P10 P Jin 136 ___.P43 p2 5 __ P18__ __P20__ P.H. _ PJd__ P26

CONVAIR MASTRIMATE

4.1 That Candillon And it is both Continued.

General Test heaults:

Specimen S/ 124 United Cont.

Test ins. R.T. Mobiley
CVAC Ins. HA

Paragraph Specification equirement

4.3 Operating Vib.

Z axis

Screep-Textronix calib.

Input 12" run at 100 mo. in

12" run at 600 mo in

record may. # 159

accell. record may. # 2000(2)

record # 18000

Start 160.0 hro.
Store
Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Store

Stor

mon I. Made assembly cycle I to E at 45 cps - back to I at 65 Cps - Switch made considerable rattling noise during both Y's Z Secrepts

2. Mide assembly cycle I-E-I a speed 4, timing A, & 140 Cps

· W N . A 32 s

CONVAIR ASTRONAUTICS

REPORT 7A2736 119

ndicates	3 4.3 Spec C/A out of tole	rance	outrol	Date: Fingineer: CVAC Imap: USAF Imap:	
	Para L.I.		tolerance (seconds)	Type of ans	embly cycle
187			J max		
187	4	[1]	1 max		
300	?	1//#	3 Day	I IV A	t = 1
3CV	1	/ Y / '	2 mx		
25Y			2 max		

All circuits satisfactory - - - - - - - TES

DESUITATION RESISTANCE:

All circuits amagured greater than 10 megohas - - - YES HO

SUITCH CONTINUES AND NUN-CONTINUES

All switches satisfactory

Para 4.1.0		NO	Switch r Internal	caltion
Para 4.1.0	YES	ese note	Internal	External
		V A		
	1Δ	H		
	/ 4	/ /		

CYCLE SECTENCE TIME: (20 milliseconds minimum)

External to Internal 330 milliseconds

Internal to External 225 milliseconds

PO511	ION TRANS	ZR TUEL	(15 a111	iseconda	maximum)	CAC	tot y	un
Jironit.	C.B.C.	En tota	IN to IN		Clouds	Chap Ma	in to br	Ex to In
P14		45	1.5		P/.2	N	1,5	1.5
P32	0	1.0	7.5		P22_	Ò	20	1.5
P3Q	<u> </u>	- F.O.	2.5	1	P34	P	118/11	10
P36	-	1.2	40	ł	P.A.		328115	1.5
P/J	 	1.5	10	ł	P16		1 8700.25	1.5
F18	-	143	4:3		Pail	3	+ -2.3	Ree,
<u> P'0</u>	 	1.5	1-4-7-	1	P34	} I	10	1-/
P20	1 1	0,50	1 oz. U	L	L	1	1	}

CONVAIR ASTRONAUTE 5

General Tes	t Regulter	inter 10-6-59
	LA TINITED Corp.	Test kngr: T. Me. CVAC Insp: UGAF Insp:
Paragraph	Specification Requirement	hemarks
43	Operating Vib.	
i		
-	•••	
1.4	Operating Time:	
	Start 160.5 nrs. Stop nrs.	· · ·
	Assombly Cycles	
	Start hrs. Stop ars.	
Notes: / M	ute assembly cycle a	t 140 CPS @ Speed # 20 - 2000 SN
2.5	-200 mag # 137	20 -200 SN
3.4	ssemble outs -x	Ram Pertor med at

A SHIP A SA

-4

CONVAIR ASTRONAUTICS

		Opn. Spec Cont of tole	nited.	" H x is 124 Coutrol	CYAC	neer:	Mobley.	P.T.
A.5	SSEMBLY O	TCLE OPERAT	104			· ·	•	
		Para L.1.8	7 30	tolerance	Toma	of agent	1= 0=010	
	roltage	step	(ubmooes)	(seconds)		to Ext Ex		
ľ	16V			BAZ				
	1AV	4		3 707		1/1/		
	<u> 30y</u>		INH	2 max		///4		
	30Y	1	1///	2 202		·		
	25¥			2 202				
L	25 V			2 max				
SHI	CH COUL	REISTANCE: Lite measure MUTTY AND R thes satisfa	ON-CONTINU		ohms		— N∪ C	
	•	Para I.1.	YES		itch pos			
		-step-	_	1	La Long La	A MALL PORCE		
		-		N/ /				
			A CHARLES THE REAL PROPERTY AND ADDRESS OF THE PARTY AND ADDRESS OF THE					
		1	1 1	17				
				111				
(.≱ &.,	te spanne	CZ TINE (20, 0111100					
CYC	ie spanki	OF THE (
		o Internal		conds minim				
E	xternal t							
E:	xternal t	to External	R	illisecrats				
E:	xternal t	to Internal to External		illisecrats		€.F.€.	Ta te Ex	By to In
Fos.	xternal to	o External		illiseconds	ziona)	o.F.C.	In to Ex	in to in
Fos.	rternal to mternal to C.E.O.	o External		illiseconds	risma) Circuit	than No.	In to Ex	ax to In
POS P14_P32_	rternal tonternal to C.E.C. C.E.C. C.E.C.	o External		illiseconds	Circuit Pul F22	then to	In to Ex	in to in
FOS: 1 POS: 1 P1/2 P3/2 P3/2	rternal tonternal to C.E.C. Chan.	o External		illiseconds	Circuit P. 7 F22 P34	than No.	In to Ex	in to in
POS P14_P32_	rternal tonternal to C.E.C. C.E.C. C.E.C.	o External		illiseconds	Circuit Pul F22	than No.	In to Ex	Ex to In

4.1	TEST CONCITIONS	AND PROCEEUS	(Continued)
			(

Specieen 3/H 124 Whited Cant. CVAC Inspi NA

Yaragraph	Specification Requirement	hemarks
·	Past Vibration	
	Post Vibration proof cycle	
	•	
•		
1.4	Operating Time:	
	Start 16/7hrs. Stop hrs.	
	Assembly Cycles	
	Start hrs.	•
	Stopare.	•

1.CEC May. # I-E-I @ 1294/soo,

2. Reducing Midwat data indicated that

ITOIAte ITOID WAS still intermittent-speciment

was Ited (IE # 419475) 16-12-24 and

sent back to Vender 181 Typair & per

verbal sprement oily Mr. s.F. King, Ele T. Dos.

CONVAIR ASTRONAUTICS

REPORT 7A2236

141 B3

Post Vibration proof cycle

icates		T CTM				
	Fare U.I.		toleran	بندا		embly cycle
187	1	1.93] max	- 1	المناها	in to in
157	1 4	1.59] max	-		
307	1	.871	2 101			
30%	1	7260	2 - x			
<u> 257 </u>		1.54	ZHAX			
25♥						
Thic laire	FIRSH THE ELLE SETISFACE RESISTANCE.	:tory	2 max		- TFS	■0
THIC 1 sire ATION 1 cire	EILSTANGE: BILLSTANGE: BILLSTANGE: BILLSTANGE: Ches setisfed	tory	than 10 ga		· YES	
THIC 1 sire ATION 1 cire	ERISTANCE: Wite massured	tory i greater t	than 10 ga	Switch :	· YES	*********
THIC 1 sire ATION 1 cire	REGISTANCE: wite measured THUTTE AND MO ches setisfed Para L.1.	tory i greater t	than 10 ga	Switch;	osition	*********
TRIC laire ATION laire	REGISTANCE: wite measured THUTTE AND MO ches setisfed Para L.1.	tory i greater t	than 10 ga	Switch;	osition	*********

xternal to Internal Ammillisecond

Internal to External 18 millisecondo

1361	IN TUNS	Th Time	لللعكليا	i se conde	Timum'			
Licenti	C.E.C.	in toex	w to In		firents	F	In to Er	Er to In
- F	7	. !	1 - 2		F3	N		
P32	a				P2.		H	
_ PN	, R	.8			P34	T P		
P36	<u> </u>	· <i>B</i>	1 - 7	t t	1:	<u> </u>		<u> </u>
E		$I_{i}I_{i}$	$1/\sqrt{2}$		E FIL =		1 3	1 4
F18	I	1.2	1 - 8		P.d	3	$\bar{l}_{i,\ell}$	7.5
Pin		8			Pli	1	B	II
F26	X					•	*	1

PALTAGE	PROF: Maginum Control Voltage (30 V.)							
	artish in Arieros	l Poeitian	SH. HE.	Setter in Internal Position				
W. K.	CTECETE	DATA		CIRCUIT	DATE.		Į.	
	77010 - 17010	.090		17014 - 1701D	1356		1	
	TYPER & TYPEL	138	В	77014 - 17051	.130		卜	
	17067 1705K	174	1	77014 - 1705K	100		L	
D	17060 17051	167		17014 - 1705U	.099		↓.	
	1706R - 1706C	203	11	17004 - 1704C	.191			
1	17060 - 17024	105	1 1	77024 - 77033	.089		\downarrow	
0	7701c - 17020	.108	10	77028 - 77038	034			
<u> </u>	17267 - 1720	.087	l l	77028 - 17078	023	7	1	
1	2706e - 27010	.108	1	1702C - 170X	104		-	
J	3776t - 3773K	.071	,	אנסית - בסידו	.046			
	J7066 4.7 031	.118		7024 · 17031	.088		1	
	1706H = 1707H	122		שנטמ _ מבנת	.091		!	
_X	קימרנ אומרת	100	<u></u>	17023 - J7032	035		.	
Ħ	1706g - 17703g	111		שימת - בנמת	.094			
0	37063 - 3774A	. 141	0	7024 - 702A	.138		16	
2	3706d 3704C	.096		17028 - 17040	075	I	-	
<u>u</u>	שיירים ביירוש	. 089		1703C - 1774	.074		•	
1	JOOLE JOOLN	135	R	7024 - 77901	./2/		- 4 . · ·	
3	J706X - J704R	.102	S	17028 - LTOUR	.074		•	
† .	J/266 J7241	.091	T	77076 - 3704	.044	I		

continuiter anace.

All circuits indicated continuity . . . You No . . . 300 No to

Post Vib. Proof Cycle

Test Engri R.T. Mobley

Paro 114

Report 742236

TOAY Inapi NA

OVAC Inspi

Minisum Control Voltage (25 V.) VOLTAGE DECEN Switch in Laternal Position Switch in Interval Position Bela Mila _ circri_ DATA CIMOUIT LIL. שנפת - שנסת 1122 מנכת ו- אוסדו ,440 152 170CF = 1 17055 J7014 - 17051 .121 1706F - 1 1705E 1166 37014 : 3705X 1104 17765 - j 77051 176 17014 - 1705 i 107 . R 37060 - 3705C 1214 J7014 - 1 J7053 .214 TOOK - I TOOK .105 1700A 11 1703A ,092 .108 _מנרה - פנבדנ . 095 H 17061 - 170T . *08*8 TOTAL IT TOTAL C23 I 17760 - 17707C . 108 .102 J 17061 - 1907K .072 मार्क मं म्यार .046 17060 - 1 1701k :113 J1024 - J1034 088 אניינו ויי אפנינו 124 J7724 - 1 J7034 1 092 × קורת - ארת 100 שני לינו בי שיינים 4/1/ 15cm |- 1cm30 ,095 .0 ಸಾಟ - ಸಾಬ 142 Jak of Jak .044 F 77061 - 1. 7701C 097 2022 - 2022 ,076 mee of their .090 R COME - COM 136 501 5018 122 57067 - 1102 S The transfer ,074 .092 Frank - This ,044

B

PAGE 155

ADDENDEM I

SUBJECT: Evaluation of the noise problem on the United Control Corp. 27-06165 and 27-06177 Main Power Changeover switches, which includes testing of the Reach Relays,

P/N 9225.

A SUMMARY OF THE PROBLEM:

The United Control Corp. Main Nissile Power Changeover switches, CV-A parts No. 27-06166-1 and 27-06177-1 started failing in CV-A Receiving Inspection about 10 December 1959. The Engineering Operating Procedure (EOP) used by Receiving Inspection, required that contact "noise" he less than 10 millivolts, when vibrated on the TET-810 Vibration machine. All of the United Control switches being received by CV-A at this time were failing to meet this requirement, with some units exhibiting as such as 300 millivolts of noise.

CV-A Components Test Laboratory (Dept. 564-5) was performing the Engineering Evaluation Test on the 27-06166-1 switch at this time. The job of investigating the "nuise" phenomena, and determining what was generating it was assigned as an additional task to this test.

On reviewing the failures that had occurred, it was determined that all of the out-of-tolerance readings were occurring on the AC switch contacts. United Control Corp. was using Leach, Magnetic latch, 10 amp., 4 PDT relays (Leach P/N 9225), for the AC switch, in all of the units giving trouble at this time.

PAGE 126

ADDENDUM I (CONTINUED)

TESTING PERFORMED ON THE 27-06166 SWITCH:

The first general approach, in pursuing this problem, was to determine how much effect the different variables had on the noise generated. This was done by holding all variables except one, constant, and changing it in a logical sequence of ateps.

A test setup was built according to Figure 3 to duplicate Receiving Inspection's test set voltage and current characteristics. United Control switch, S/N 124 was connected to this test set and All AC circuits measured for noise. With R-1 load set at 10K (approximately 3 ma current), 4 circuits exhibited more than 100 MV of noise when the switch case was taped gently with a light metallic object. This specimen was next connected to the Evaluation Test setup and all AC circuits, except 2 (2 of the 4 circuits that exhibited more than 100 MV noise on the prior test) were energized with full rated loads, 5A, 400 cps. When the specimen was taped gently with a light metallic object, the result of noise measured was the same us the results of the former test. Three assembly cycles were performed at rated leads, with the noise on some circuits increasing, some circuits decreasing and some staying the same.

These results were next rechecked by using a different switch. A production unit, S/N 125, had 8 circuits exhibit more than 20 millivolts of noise when checked by Receiving Inspection on the TET-810 Production Vibration machine. All 15 AC circuits were first energized with rated loads (5 amp. 400 cycles) and the contacts monitored for noise. Next, twenty five assembly cycles were accomplished at rated loads. The overall result was the same as with S/N 124. The switch (S/N 125) was next rechecked with the Receiving Inspection test setup on the TET-810. Unly one circuit exhibited more than 20 millivolts of noise. The unit was re-run on the Receiving Inspection setup the next day with the noise condition getting steadily worse.

United Control switch S/N 124 was next subjected to random vibration on the CV-A Components Test Laboratory facilities. The one circuit that had exhibited the most noise in prior tests was selected and monitored. Random vibration stimulus was a 2G RMS, 1 minute burst of energy (bandwidth as noted below). The following results were recorded on a Hughes Memoscope. Model No. 104.

PAGE

ADDENDUM I (CONTINUED)

TESTING PERFORMED ON THE 27-06166 SWITCH: (CONTINUED)

Bandy	idt	h e	f Sti	aulus:	Avg.	Noise Level:	Spike	Noise Level:
18	срв	••	1 Ka	•	60	millivolts	170	VM C
	-		500 cj		60	MV	160) MV
18	cps	_	100 cr	p. m	10	MV	10	8 MV
100	сря	_	500 cj	p s	60	MV	170) MV
100	Срн	••	300 cj	р в	70	MV	180	O MV
300	cps.	-	500 ci) 8	40	- 60 MV	160) MV
300	cps	•	1 Kc	t	40	- 80 KV	140) MV
1	Ke	_	1.5	Kc	150	MV	306) MV
1	Ke	-	1.2	Kc	125	MV	229	5 MV
			The	amplitude	WAR	changed to 1G	RMS:	
1	Kc	_	1,2	Кc	6	MV	28	R MV
			The	amplitude	WAS	changed to 3G	RMS.	
1	Kε	-	1.2	Ke	175	ΗV	280) MV

Accelerometers were attached (using dental cement) to the relay enclosures of the 4, 5 amp, circuit relays in S/N 121. The switch was subjected to an 8G, slow sine sweep and resonances were recorded as follows:

Vibration Frequency(cps):	Amplification Factor:	g Level:
220	4 5	36
200	5	40
460	6	4H(*)
590	4	32
1100	3	40
2200	Ä. °	68

(*) Perpendicular to the axis of vibration

The final check on the switch, as an integral component, was to subject it to a 5 minute random vibration test with characterism tics according to Figure 1. All AC circuits of the specimen were energized with rated current, 5 amperes, and noise was determined as the voltage drop difference between static and withration conditions. Results were as follows: All circuits exhibited some noise, 7 circuits more than 10 millivolts, with the worst condition being 74 willivoits

In reviewing the test results and data taken thus far, the logical conclusion was that the Leach Relays, P/N 9225, being used as the AC switch, were the source of noise

TESTING OF LEACH RELAYS, P/N 9225:

Relay K-2 was removed from United Control specimen S/N 121. This relay contained circuit P-26 which exhibited the most noise during prior tests. The relay cover was very carefully removed and the internal mechanism given a thorough visual inspection. The circuit shown in Figure 3 was connected to a set of contacts and several forms of stimulii were applied in an attempt to reproduce noise. Negative results were encountered in all except the following situation. A normally closed set of contacts were gently pried open with a Nylon probe. Just as the contacts started to separate, it was noted visually that arcing was occurring between the normally closed and common contacts. This circuit was being monitored on a Rughes Memoscope, Model 104, and the pattern on the scope caused by this condition was essentially the same as the pattern that Receiving Inspection had been getting when a switch failed on the TET-810.

In view of the results to date, it was decided that the open relay should be vibrated and its physical and electrical action during vibration recorded and analyzed. A vibration jig was designed and built that would give a minimum of resonances Figure 2 is a photograph of the jig with a relay wounted electrical test circuit was built to allow a stimulus to be applied to the relay contacts selectively and the contact, so energized, to be wonitored on an oscilloscope or other instru-Figure 4 is a schematic of the test set. Relay K-2 mentation which had been removed from switch S/N 121 was subjected to a slow 10G sine aweep, and the amount of displacement of the contacts during resonances was noted. Many resonances occurred from 118 cps to 1670 cps with the average displacement during a resonance being about 0 05 inches and the waximum displacement (at 360 cps) being 0.08 inches. Electrical noise was not monitored during this run

Relay K-2, which had been removed from S/124 was subjected to a slow, 86 wine sweep with essentially the same results as were obtained from the previous test. The maximum contact displacement on this relay was 0.03 inch it 1077 cps. Noise was monitored and occurred as follows: From 200 MV to 400 VM between 1050 and 1100 cps, peaking at 1055 cps.

TESTING OF LEACH RELAYS, P/N 9225: (CONTINUED)

Two Leach relays P/N 9225, directly off the Leach production line, were hand carried to CV-A by a Leach representative. One of these relays was vibrated under the same conditions as the test just completed on K-2 from S/N 124. The results were practically the same as those on the previous two tests, with the noise occurring, if anything, more often (more resonances of relay contacts) than on the previous test. Figures 5 and 6 are photographs of one of these P/N 9225 relays with the cover removed. Figure 5 shows the contacts open and Figure 6 shows the contacts closed

Fastax movies (16mm) were made of two different opened relays being subjected to an 8G sine sweep vibration. The results of these movies confirm the data measured in other ways on the previous tests and give a graphic record of the vibration characteristics of the Leach 9225 relay

Two Leach relays were hand carried from United Control Corp by an engineering representative. These relays were from a lot that was currently being used in the production of the Main Power Changeover switch P/N 27~06166. The relays were not opened but were checked for noise. When subjected to an 8G sine sweep on the fixture shown in Figure 2 and monitored with the test circuit shown in Figure 4, 6 of the 8 contacts monitored, exhibited more than 10 millivolts of noise.

CRITIQUE ON CONFERENCE HELD TO DISCUSS AND RESOLVE THIS PROBLEM:

At this time a conference was called by CV-A, with United Control representatives, Leach Corp. representatives and cognizant CV-A department representatives attending. The purpose of the meeting was to discuss the switch failures and the results of the tests performed to date, and to try to adopt a program for resolving the overall problem

The results of the testing that has been described thus far, were presented by CV=A Engineering, with the following conclusions:

- The United Costrol switchs; P/N 27-06177 and 27-06166; because of the noise, do not do the job that CV-A engineering requires;
- 2) The source of the noise is in the Leach 9225 relay.
- 3) Under a broad interpretation of CV-A specification 27-06106, revision "C", the United Control Switch does meet CV-A requirements; however the specification as grossly inadequate.
- 4) The characteristics of the TET-810 were not known well enough to continue using it, in any capacity, as a test instrument for power changeover switches.

United Control Corporation stated that they would effect the redesign necessary to make the AC switch of the Main Power Changeover switch, satisfy the CV-A requirements. Leach stated that they rould modify the design of the 0225 relay to make it meet CV-A noise requirements. CV-A stated that specification 27-06166 would be revised to adequately reflect the CV-A requirements.

ADDITION I (CONTINUED)

TEST RESULTS OF MODIFIED SPECIMENS:

The Leach Corporation effected two modification programs for the 9225 relays to be purchased by United Control Corporation for the Main Missile Power Changeover switches. The first modification consisted of adding stiffeners to, and increasing the mass of the relay contact arms. The second modification consisted of changing the relay contact material to a high gold content alloy. Two of each type relay just described were hand carried to CY-A test laboratories. The two relays with gold contacts were redesignated as Leach F/N 9225-5811 and the two with stiffened contact arms as Leach P/N 9225-5373.

Both of the 9225-5811 relays were subjected to 3 axes of 3G sine aweep vibration and menitored for contact noise using the test circuit shown in Figure 4. (8.5 MA contact current) No noise was measured on the 8 contacts in either, "External Closed" or "Internal Closed" positions for the 6 sweeps. Figures 7, and 8 are photographs of one of the two 9225-5811 relays with the cover removed. It can be seen by comparing photographs of the 9225 and 9225-5811 relays that the contact shape and contact area were also changed in addition to changing contact material.

The two 5373 relays were next subjected to the same type test as just described. One relay exhibited no noise under all the conditions tested. The second of the two 5373 relays exhibited more than 300 millivolts of noise at 1625 cps (vibration frequency) on one of the 4 contacts. The specimen was allowed to dwell in the critical vibration frequency area. Other contacts developed noise greater than 10 MV, and the situation grew progressively worse. The test requestor's representative decided that this modification was unsatisfactory, so testing on the 5373 relays was discontinued.

As pointed out in a previous paragraph, amplification factors of up to 8.5 were encountered from the input to the switch mountings, to the input to the relay mountings. In view of this, United Control Corp, redesigned the relay mounting arrangement. A rework kit was shipped to CV-A and installed in switch S/N 121, Figure 9 is a photograph of S/N 121 with the rework accomplished and two of the relays instrumented for vibration. The reworked switch was vibrated, at 8G, 5-2000 cps and the accelerometers were monitored for resonances. The maximum resonances encountered were 12G, or an amplification factor of 15.

TEST RESULTS OF MODIFIED SPECIMENS:

An investigation into the TFT-810 problem, revealed that the vibration fixtures used for mounting the 27-06166 and 27-06177 switches were amplifying the "G" level considerably. At some frequencies the amplification factor was as great as 5. Up to this time there was no record of a validation making been run on the fixtures. Another group at CV-A was given the task of re-designing, fabricating and validating new fixtures with a low amplification factor. To the writers knowledge this task was attempted but never completed. The final test on S/N 121, with the new 5811 relays and the rework kit installed, was to have been vibrated on the TET-810 using the new vibration fixture. Since this new fixture never materialized this test was never performed.

Both the Leach relay P/N 9225 and P/N 9225-5811 were subjected to contact chemical analysis (spectography technique) with the following results:

9225-5811 Relay:

Âu	Pt	Zn	Cu	В	P	N_1	Cd	Ag
10%	5%	10%	2%	0 , 5%	0.01%	5%	0.1%	Remainder

9225 Relay:

Au	Pŧ	Zn	Cu	В	þ	N ₁	Cđ	51	Ag
•	_	1%	1%	1%	0.2%	-	15%	2%	Remainder

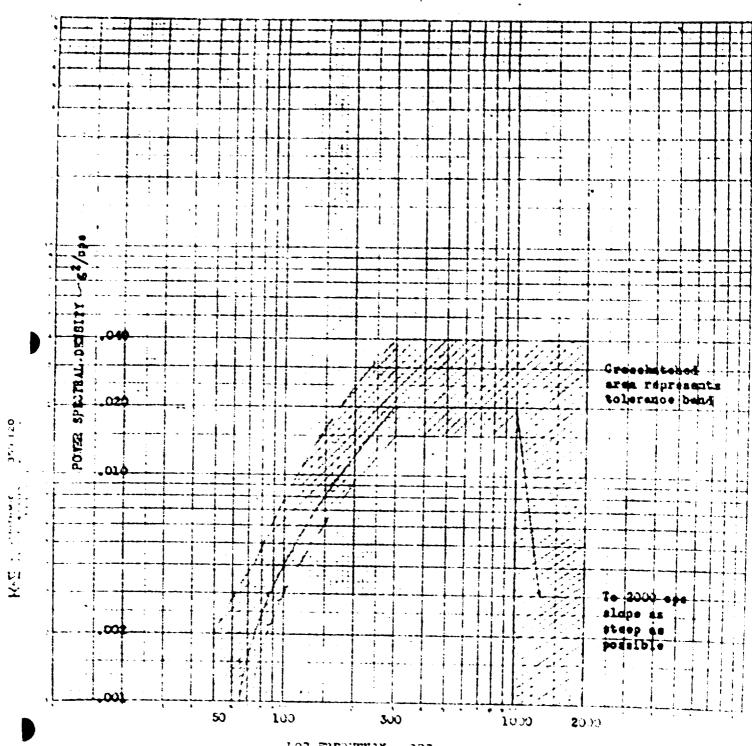
United Control Corporation has redesigned the 27-06166 and 27-06177 switches to use a rotary switching mechanism in lieu of relays for the ΔC circuits, however some components had been manufactured using relays, and are currently being used by CV- Δ

TEST RESULTS OF MODIFIED SPECIMENS: (CONTINUED)

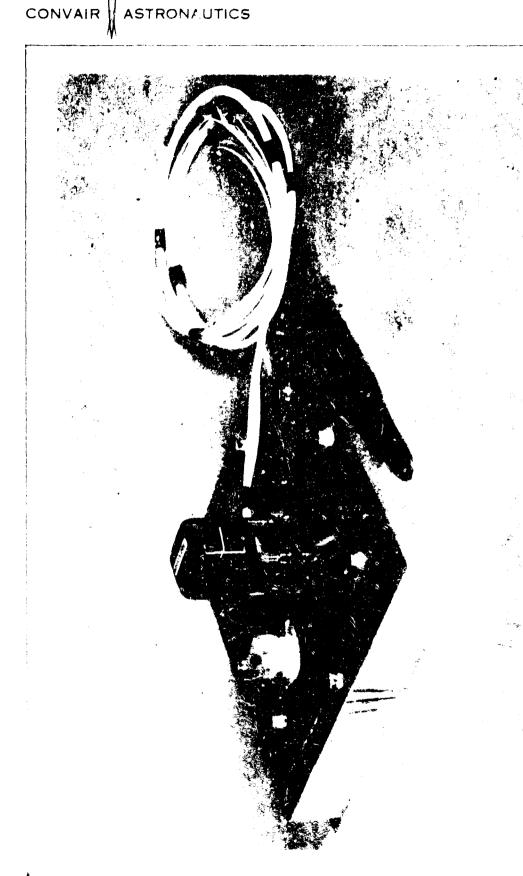
In summarizing the results of this test the writer concludes that the Leach relay, P/N 9225_{ν} is not suitable for use in the Missile Power Changeover switches and recommends that they be removed from all subject components. The Leach relay, P/N 9225-5811 is suitable for use and it should be substituted for the 9225 relay.

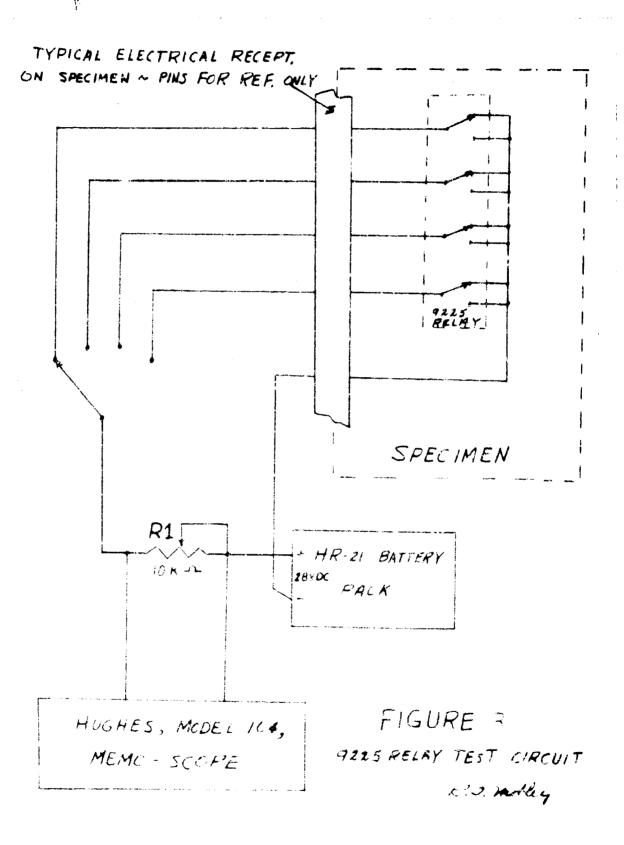
-VN 42011

FIGURE 4 RANDOM VIBRATION SPROTRUM MOSE AND TANK SECTIONS



LOD FREQUENCY TPS





V - N 4 102

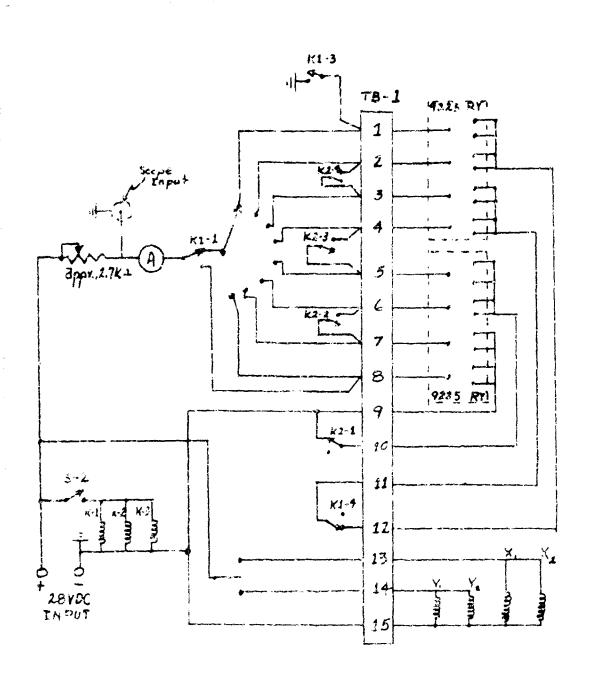
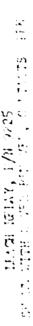


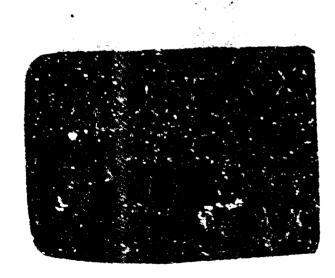
FIGURE 4

MAIN POWER CHANGEOVER SWITCH TEST SET
TO TEST 9225 RELAY NOISE
RD. Mattey

1 4 5 N 1 A 702 1

CONVAIR ASTRONAUTICS



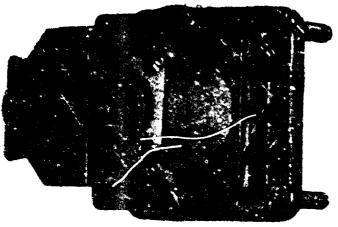


FORM NO A 702-1

Best Available Cor

PARE 139







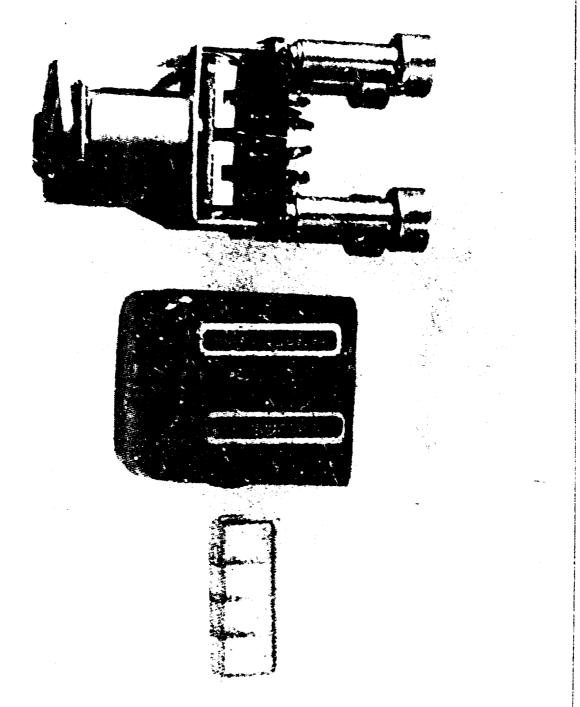
12.401 (15.18.4), 17/H 92.25

FORM NO A 702-1

Best Available Cor.

CONVAIR | ASTRONAUTICS

ACPORT 7 A 2236



IF CHESTIAN, FAN 9805-4511 (GRID VILLE TERRITOR). STEED GRID CASE STOWN . CONTROL OFF

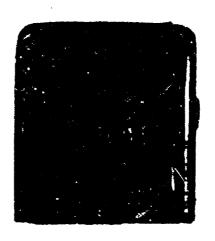
F1373 7

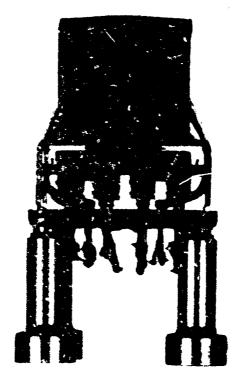
1084 NO A 7024

Best Available Coi.

CONVAIR ASTRONAUTICS

PAGE 141

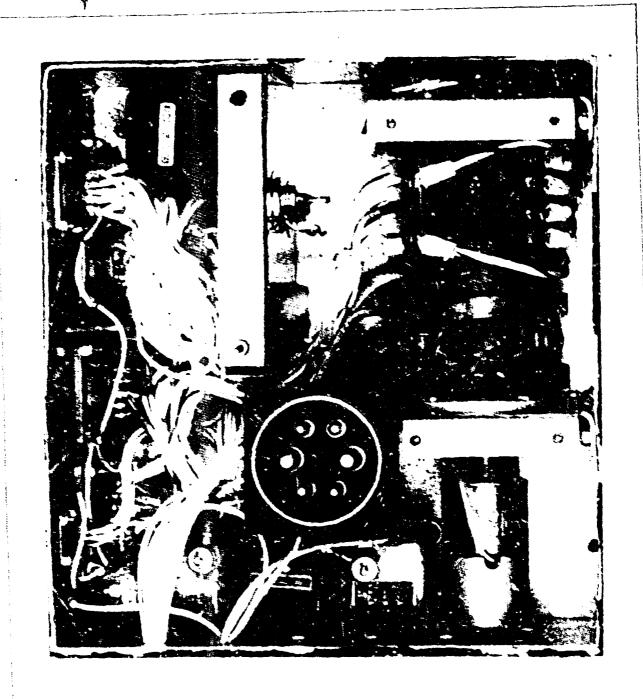






en ablas, ed: 9285**-5811** (som and modulets) - squad with outse be to , o the to otosed - squad **x**

PASS . 140



CANNATURE FOR A CHARGE WEE SWITCH, BYN 27-36166-1 FidTHE 9

Best Available